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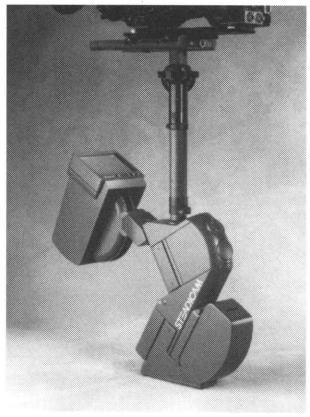

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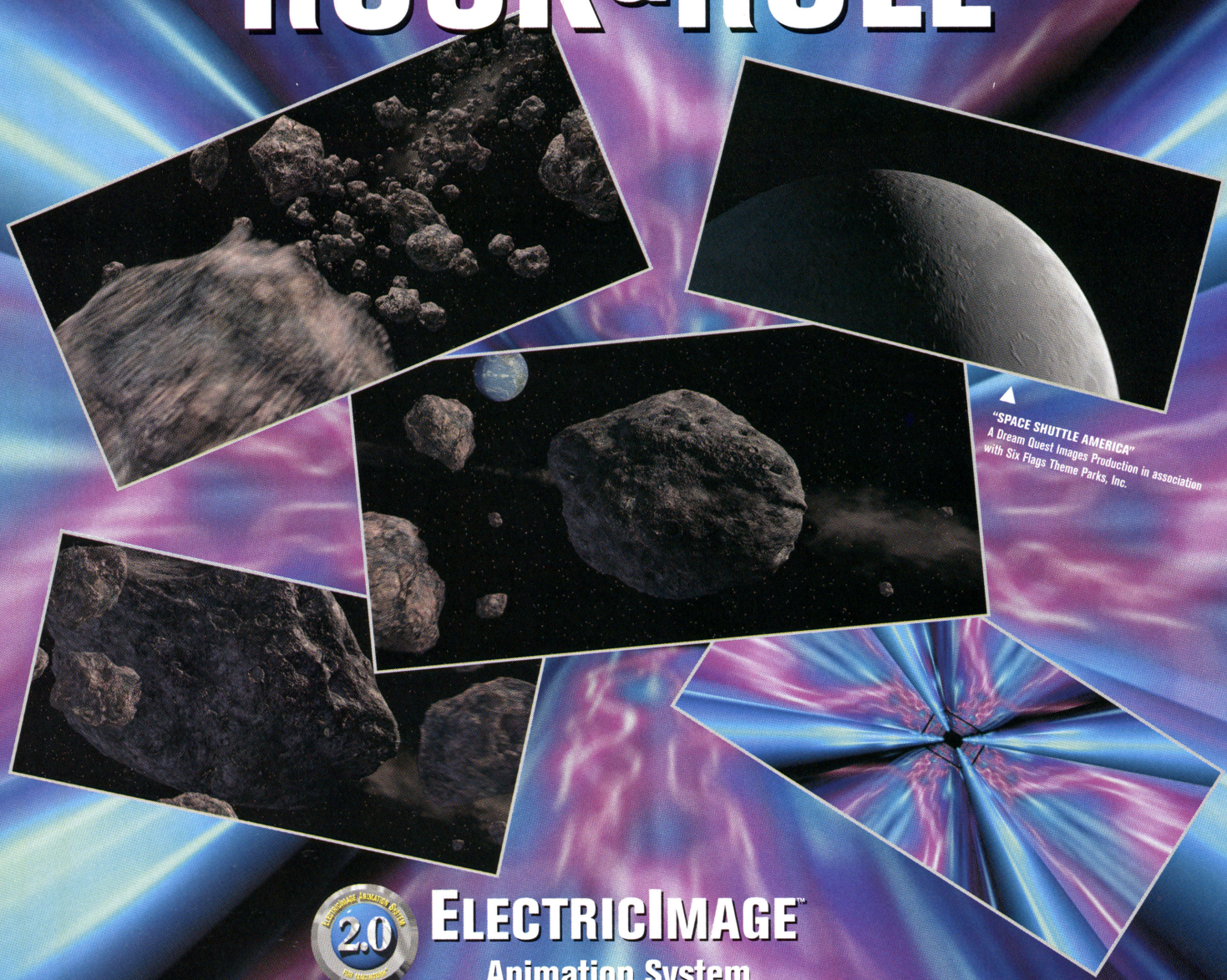

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The International Journal of Film and Electronic Production Techniques

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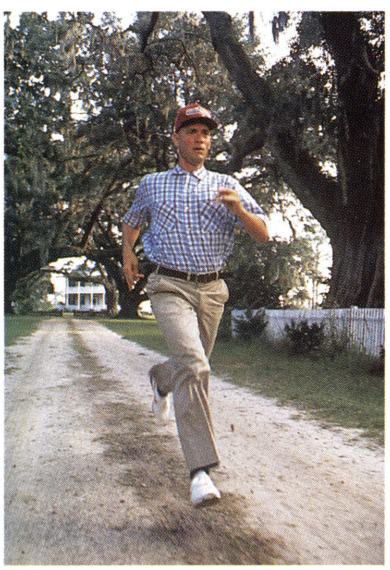

On Our Cover:
Forrest Gump (Tom Hanks) runs down the road of his destiny in Paramount Pictures' summer blockbuster, shot by Don Burgess (photo by Phillip Caruso).

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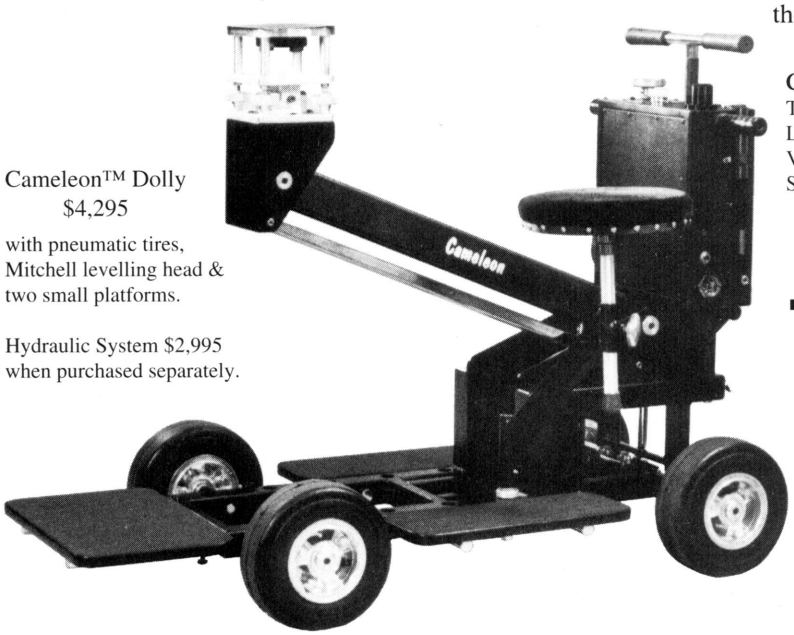

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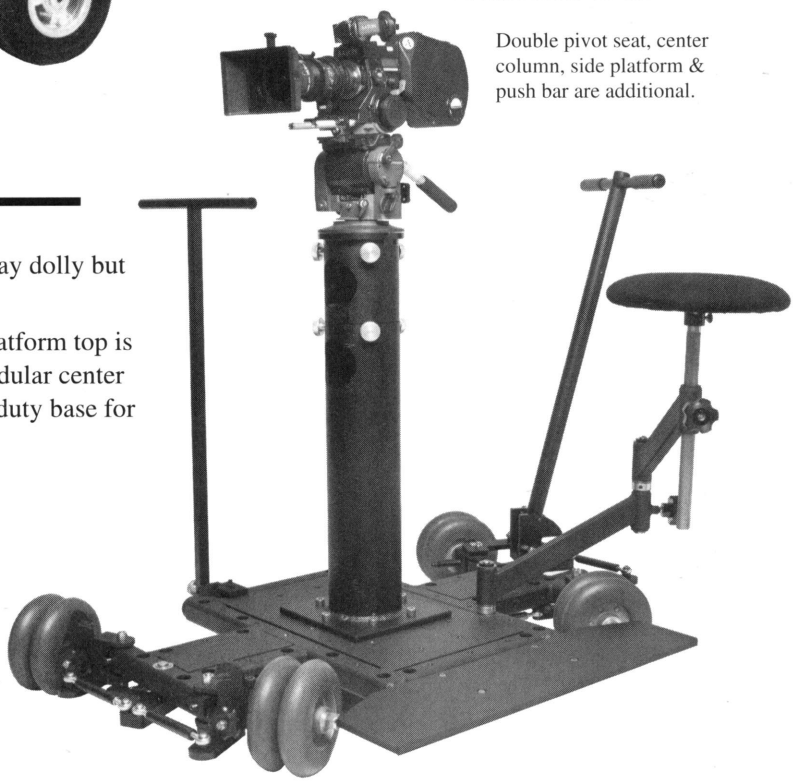

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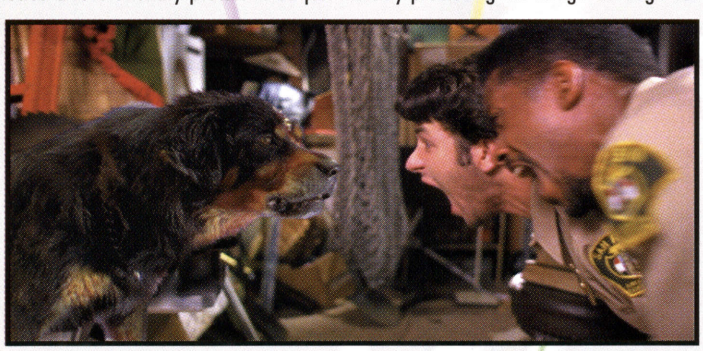

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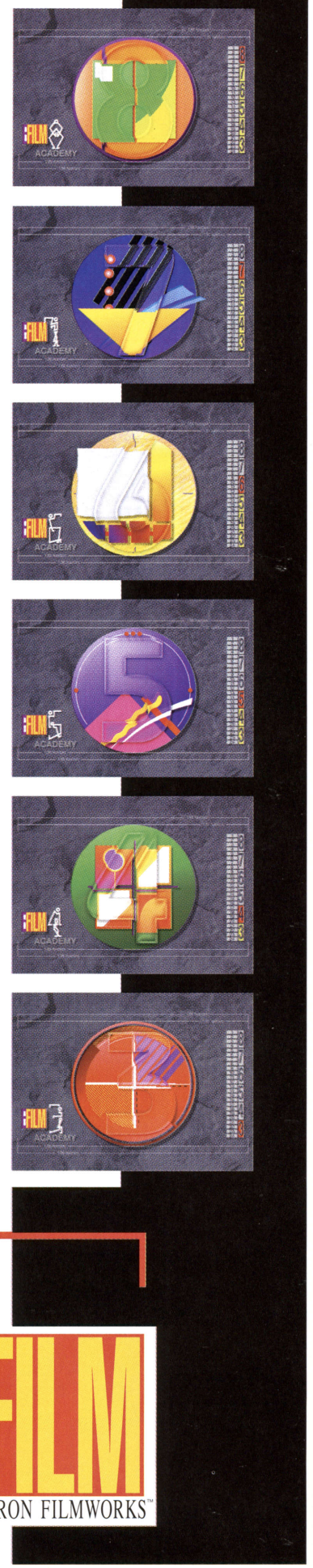

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The SkateCam

Director/Cameraman Don Guy showed us a photo of Jon Fauer's SledCam and asked whether we could make something like it. Director of Photography Jon Fauer had the SledCam made to shoot CBS promos on ice for the 1992 Winter Olympics. It had one central handle and ice skates that tilted.

Don Guy wanted one with wheels, to shoot extreme low angles of an outdoor basketball game for a Kellogs commercial; intense, fast-moving action. He was going to dolly on asphalt, so we used model airplane wheels with pneumatic rubber tires. (We can also let you have narrower, solid wheels for use on carpet.)

You can have all four wheels on swivel mounts; or two swiveling and two fixed straight ahead; or all four fixed. If you want to go in a straight line *fast*, four fixed works best. Changing a wheel takes less than a minute and no tools.

The handle arms can be set to any fixed angle from vertical to horizontal. Alternatively, you can set them so changing arm angle during the shot tilts the camera while all four wheels stay on the ground. You can also pan the camera as the SkateCam moves in a straight line.

The Steadicam Saddle

Garrett Brown originally had this made for him on location, by a grip. After that shoot, he stored it with us and then gave it to us. For repeated use, we made the saddle's Steadicam mount stronger and uglier.

It's not just for rider POV shots. It gives you Steadicam footage as steady as walking shots, but higher up and faster moving. One semi-serious complaint we've had was that the footage looked too smooth to be horseback POV; almost like a helicopter shot. One way to fix that is to include the mane of the camera horse.

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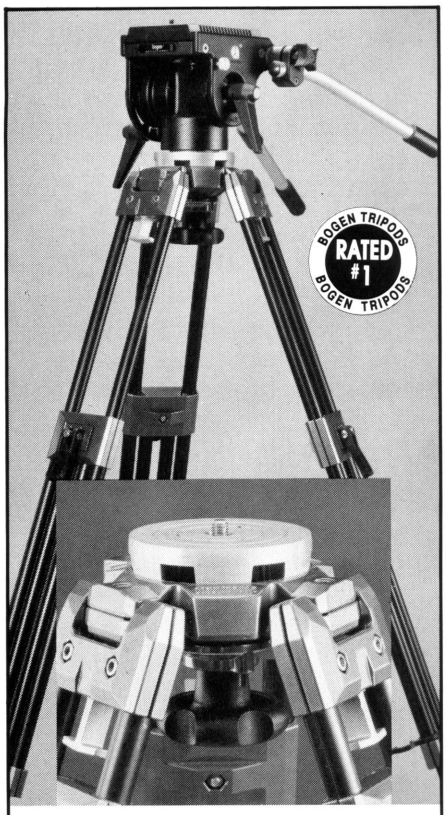
The Camera Shaker

We had this made for us, to simulate explosions and earthquakes. It has two motors in its base, one at the front, one at the back. Above them, the camera baseplate is mounted on a thick rubber pad. There's a remote control box, not shown here.

The remote box has an on/off switch and two potentiometer controls. With those, you can set and vary the *speeds* of the two motors—each motor independently. On the Shaker's base, you can see two large pale-grey knobs. Turning those knobs controls the *distance* of each motor's shake movement.

The front motor moves the front end left and right. The back motor moves the back end left and right, independently. The rubber pad makes the camera wobble every whichway. You can mount a video tap on the ARRI 3 and use a remote monitor to see what's going on.



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Letters

The Kyrle Machine

I am a student at the Vancouver Film School. Recently, I was able to direct a 10-minute film entitled *A Reflection of Murder*. When I wrote the script, I envisioned numerous strange and unique camera angles to suit my visual style. This being nothing more than a student film, I quickly found out how the school's available equipment restricted many of my ideas.

Enter Kyrle Wright, a fellow film student I asked to serve as director of photography. When preproduction first started on the film, I had many conversations with Kyrle concerning my trepidation about pulling off some of the shots I wanted. He was a patient listener and jotted down many notes.

Much to my surprise, Kyrle went home and built a special tripod for the shoot. It allowed me complete swivel access to the various angles that I wanted. With the "Kyrle Machine" I was able to achieve moving dutches, spinning angles, and all the upside-down shots I could ever hope for.

Being an avid reader of your publication, I know how much you celebrate ingenuity and workmanship in film. What we accomplished during the shoot week for *A Reflection of Murder* is nothing short of impressive considering the circumstances in which we found ourselves.

Thanks to a lot of hard work by my crew, and a strange contraption called the Kyrle Machine, I found myself living out a life-long dream as I brought a horror film to life.

— David Buzan
Vancouver

Search for '30s Railroad Film

For a book on historical/cultural aspects of the Milwaukee Road (railroad) in Montana, I am seeking any production information, outtakes, stills, anecdotes, or anything else relating to RKO-Radio's 1930 production of *Danger Lights*, directed by George B. Seitz and photographed by Karl Struss, ASC.

As far as I can determine, it was the first sound film made on location in Montana. Also, George Turner reported in *AC* May '91 that it was shot with a 63mm Natural Vision camera made by George Spoor, Chicago.

The movie features some wild, moving train shots, which were probably technically challenging if the 63mm camera was used. Such an involved sound production made so far from the studio was unusual, as was [the fact that the] filmmakers had access to so much rolling stock, shops, depots, roundhouses and track on a major railroad.

Any help out there would be appreciated.

— Patrick Dawson
2811 Manhattan Drive
Billings, MT 59102

Irola Praise

I loved the article in the April issue about *An Ambush of Ghosts*, shot by Judy Irola. She was so expressive about everything. The way she lights is so basic, yet so beautiful.

— Red Sinclair
North Hollywood, CA

65mm, Cont'd.

While I agree with and enthusiastically support Vittorio Storaro's comments about 65mm production in the June issue, unfortunately there is a major stumbling block to implementing them — the tiny screen multiplex/video mindset of most of today's production, distribution, and exhibition executives and their greater interest in high-quality sound than in high-quality pictures.

The 65/70mm format was a key to the success of the "roadshowing" of special major attractions from the mid-Fifties to the late Sixties when changing audience demographics ended the commercial viability of the practice. In 1977, George Lucas convinced 20th Century-Fox to do a selected 70mm release of *Star Wars* because he wanted to recreate the visual and aural excitement of the roadshow films.

Unfortunately, the aural aspect of *Star Wars* had greater impact; the new

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ground in sound broken by Lucas' effects designers and rerecording mixers came off better in the discrete six-track magnetic format of 70mm than the compromised stereo-variable-area format. As a result of the success of the 70mm versions of *Star Wars* and *Close Encounters*, there was an increase over the next 15 years in the number of both 35mm anamorphic and 35mm flat films blown up to 70mm for premiere releases for *sound*, as well as 70mm projection installations in multiplex shoeboxes too small for the picture to have any impact.

With the introduction of digital sound systems, executives are saying there is no reason to make 70mm prints, since it is now possible to have higher quality discrete stereo for 35mm prints, and, with DTS, potentially even 16mm and Super 8 prints. Only cinematographers and wide-screen buffs are bringing up the issue of "higher picture quality."

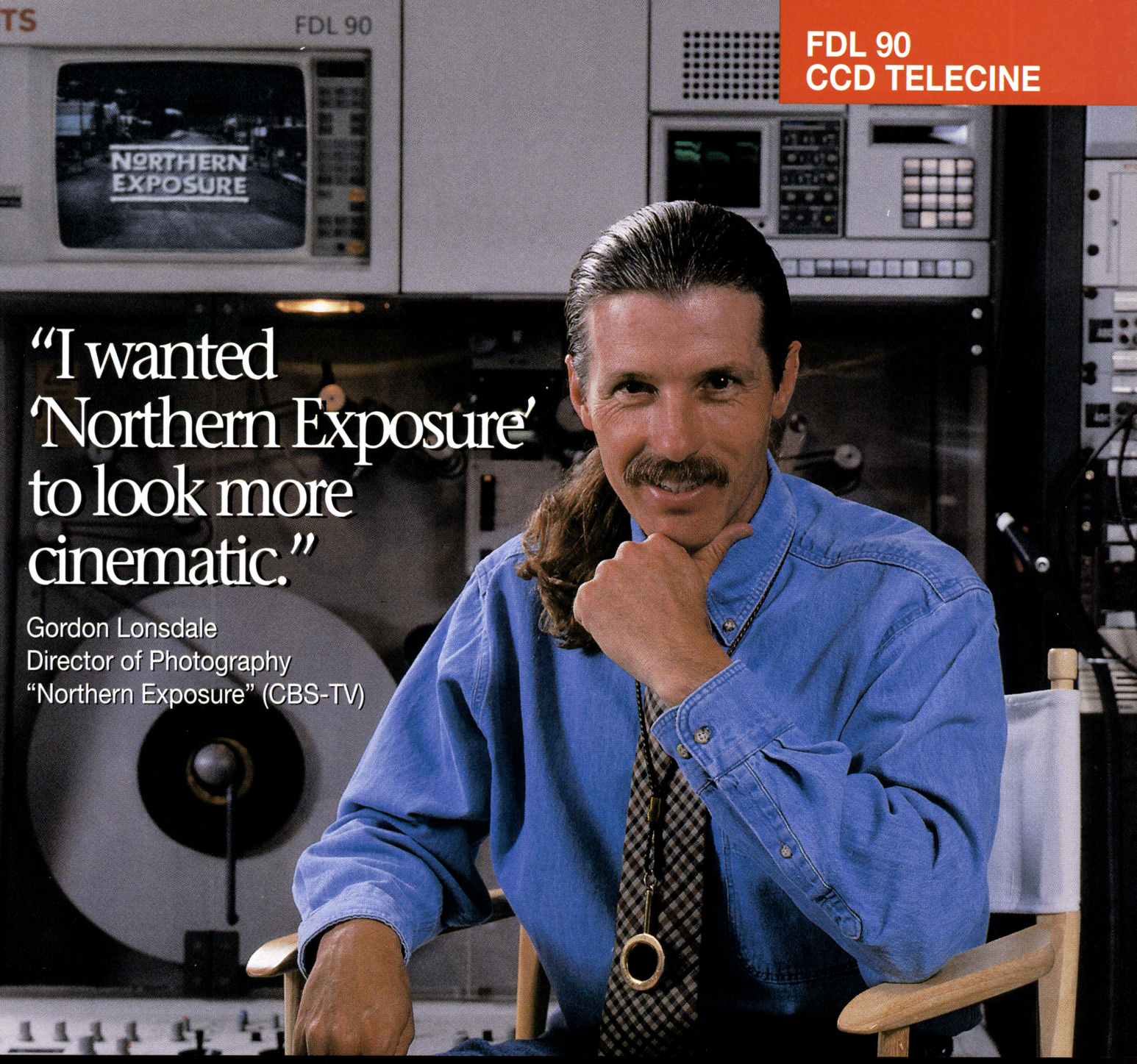
As for production in 65mm, it has to overcome the stigmatic failure of *Far and Away*, a failure many believe was partially due to Universal's not properly playing up the original 65mm cinematography. Executives and publicity people like to claim that the public is innocently unaware of the technological aspects of filmmaking and presentation, a claim refuted by the recent successful 70mm revivals of *Lawrence of Arabia*, *Ben-Hur*, and Universal's own *Spartacus*, as well as the [record-breaking run of] *Jurassic Park*.

Unfortunately, *Little Buddha* is an art-house film which is likely to have little impact on the issue. Mr. Storaro was fortunate in working with a visionary director and producer, both of whom were also outside the Hollywood loop. It will take the power of such Hollywood heavyweights as Lucas, Spielberg, Scorsese, etc. to make Storaro's vision a reality for other cinematic artists.

— Rick Mitchell
Film editor, film director,
film historian
Los Angeles

Errata

We humbly apologize for leaving out Monty Brinton's photo credit in August's article on Sony Wonder. And in July's Production Slate we failed to mention B.I.G Creative Services, who hired National Video Center to animate NBC Marketing's Infohighway video.



FDL 90 CCD TELECINE

"I wanted 'Northern Exposure' to look more cinematic."

Gordon Lonsdale
Director of Photography
"Northern Exposure" (CBS-TV)

". . . more like a feature film than a TV series. When Digital Magic told me they had the BTS FDL 90 CCD Telecine, I knew it could handle the work I wanted to do.

"When people watch us at home, we want the image they see to retain as much of the original 35mm film quality as possible. As a result, the right telecine is extremely important in transferring our footage to videotape.

"Working with the FDL 90 is such a pleasure. When our footage comes back on videotape, the transfers are so good they blow people's minds away. And they're so crisp they can pull details out of shadows.

"Everything is there on tape that we shot on film. The FDL 90's CCD sensor is so sensitive that sometimes it sees things better than my naked eye."

Whether you're working in 525, 625, 4:3 or 16:9, discover how true to the original film your images can look on the BTS FDL 90 CCD Telecine. Call us at toll-free (800) 962-4BTS to speak to Charlie Morganti, our telecine specialist, or receive literature.

"Northern Exposure" is ® & © 1990, 1994, Universal City Studios, Inc. All rights reserved.
"Northern Exposure" is transferred on the BTS FDL 90 CCD Telecine by Digital Magic, a full-service digital post-production facility in Santa Monica, Calif.

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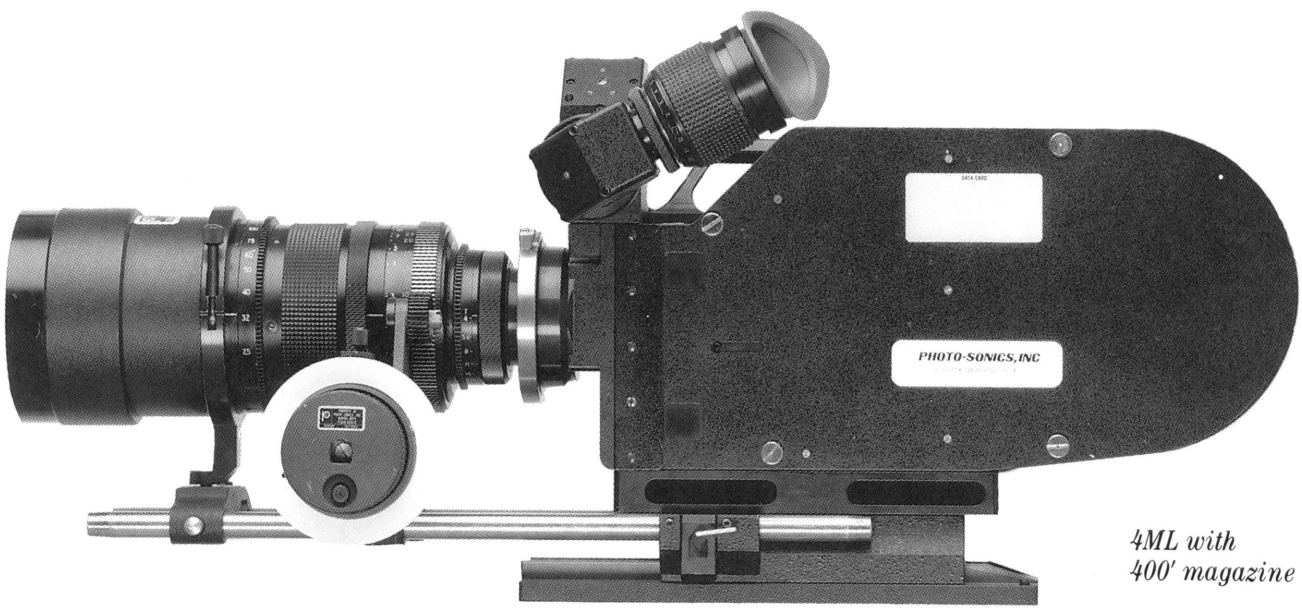
The 4ML Reflex...a lightweight user friendly high speed 35mm camera with dual register pins and video assist.



4ML with 400' magazine

Today, many cinematographers are pushing the limits of the equipment and materials available—film stocks, lights, cameras, lenses, etc. Now, with the 35mm-4ML reflex you can break through some of those barriers. The 35mm-4ML is a compact, lightweight user friendly high speed camera, which is capable of frame rates from 10 to 200 frames per second. Its cartridge-load type magazine makes it ideal for high paced sports and action type cinematography.

Yes, these cameras were originally developed for aerospace and military applications and have the ability to withstand extremely abusive environments. The 4ML camera was used in the filming of *"Wings of Apache"* where it was externally mounted on an Apache helicopter and in *"Top Gun"* where there were two cameras internally mounted in the cockpit of an F14.

Because of its compact size and low profile, cinematographers Mike Hoover and Don King utilized the camera extensively during the filming of *"Endless Summer II."* Special water housings were manufactured for the camera, which enabled them to capture incredible surf shots in waves as high as 20 feet!

Film Movement

The 4ML movement uses 2 register pins and 4 pulldown pins and maintains registration to a tolerance of ±.0002 inches. In other words, it is extremely steady and ideal for matte work. Its oiling points are minimal, which make the system very user friendly. Similar to our 16mm Actionmaster 500 camera, each magazine contains its own movement. Threading the magazine is fairly simple, and once your mags are loaded, the camera reload takes only 5 seconds. They are available in 200 loads and 400 foot loads.

Size

The 4ML can be easily converted to accommodate size and application requirements. There are 3 configurations.

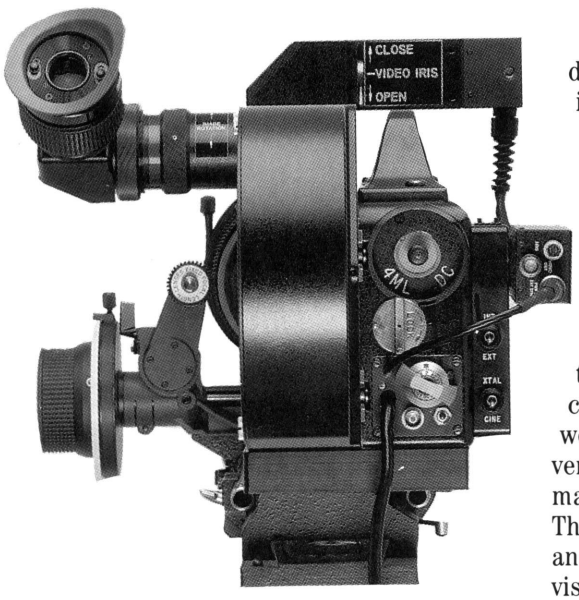
- Reflex with video tap.
- Reflex only.
- Non-reflex (point and shoot).

When used in the reflex mode with

video tap, crystal control, and 400 foot magazine, the camera is 9⅛ inches high, 17 inches long, and 13¼ inches wide. In the non-reflex mode with a 200 foot magazine, the camera is 5½ inches high, 14½ inches long, and 5¼ inches wide. In either configuration, it is most likely the smallest high speed 35mm camera in the world.

Video Tap

We use the same video camera used on our faster 35mm cameras. The system utilizes a high resolution camera which incorporates an elec-



tronically gated shutter that sharpens your video image by eliminating motion blur. This allows you to analyze your video playback with a greater degree of accuracy. The video camera is powered with 12 volts DC, which is fed from the film camera. This eliminates additional batteries and cables.

Speed Control

Speed control is a tach feed-back servo system which maintains frame accuracy of ±1 frame or 1%, whichever is greater. An optional digital speed control with crystal reference is available, which holds frame rate accuracy to ±.01 frames. This means the camera will be compatible to standard HMI lights when used at speeds within the recommended HMI (windows).

Strobe Sync

A highly accurate mid-shutter pulse is supplied for strobe synchronization through a BNC connector at the rear of the camera. This makes it compatible to most strobe systems available in the motion picture industry.

Power

The camera is powered from a single 28 volt DC battery pack that is no larger than a loaf of bread and weighs a mere 10 pounds. This supplies the video tap as well, using a step-down 28 volt - 12 volt converter located in the camera.

Adjustable Shutter

The shutter is adjustable from 144 degrees in the following one stop increments: 144°, 72°, 36°, 18°, and 9°. This allows you to sharpen your images without the additional cost of strobes. Shutter adjustment is easily done without use of tools.

Compatibility

The camera is fitted with an Arriflex eyepiece and is compatible to the 15mm Arri rod base. If you choose to use Panavision lenses, we have Pan-Arri adapters to convert to their lens support brackets, matte boxes, and other accessories. The lens mount is interchangeable and can be supplied in BNCR, Panavision, or PL. It is also possible to order the camera in a super 35 format. Various ground glasses are available upon request.

Reliability

This camera, like our other pin-registered cameras, has a carefully calculated safety margin for reliability and longevity.

The 4ML and its 16mm counterpart, the 1PL, have been put to the test over years of service at the launch facility at Kennedy Space Center where approximately 120 of these cameras are in service. About 40 of these cameras are mounted in special nitrogen-cooled housings directly on the mobile launch vehicle, some literally within 20 feet of the solid rocket boosters. During the launch sequence, the cameras are used to photograph umbilical cord separation, main engine ignition, explosive retaining bolts, and 100s of other variables. The cameras are subjected to an estimated 28 Gs in all three axes and acoustic pressures up to 160 dBm. The cameras were chosen not only for their ability to survive these conditions, but for their ability to take high resolution pictures in this abusive environment.

Contact Us

At Photo-Sonics, we design cameras for the most scrutinizing cinematographers, engineers, and, yes, even rocket scientists. We have a full line of 16mm and 35mm high speed cameras for rental, including the fastest 35mm cameras used in production today. So, when you feel the need for speed, at Photo-Sonics we have the equipment and personnel to assist you. Please contact Conrad Kiel or Shawn Jolicoeur at 818-842-2141 or fax 818-842-2610.

4ML with 200′ magazine

Photo-Sonics, Inc.
820 S. Mariposa St., Burbank, CA 91506

Production Slate

compiled by Marji Rhea

Mexico City Post Facility

CIS has become a partner in CIS/Mexico, a new postproduction facility in Mexico City that will offer digital compositing, effects, film transfer, digital paint, editing and audio services, and will target its services toward commercials and feature films. The new facility has ten postproduction suites, including an electronic optical printing bay featuring CIS' film transfer system. The facility also features two digital paint and animation suites, two real-time film transfer rooms, two digital edit bays, a multi-task suite with animation and teleconferencing facilities, and two digital multi-track audio suites.

The production and postproduction center housing CIS/Mexico is also home to two 125' by 80' stages, a film and video rental company, a film lab, a computer graphics company, an audio production company and another post facility.

For information: CIS/Mexico, Ave. 5 de Mayo #492, Col. Merced Gomez, Mexico, DF, 593-93-37, or CIS Hollywood, 1144 N. Las Palmas Ave., Hollywood, CA 90038, (213) 463-8811.

Vancouver Film School

In January of 1995 the Vancouver Film School will open its Multimedia campus, a downtown building designed and outfitted as a communications module for advanced multimedia technology. Students at the new campus will work on state-of-the-art equipment in a one-year program (Fundamentals), with a second-year program option (Advanced Multimedia). The campus also houses an Electronic Cafe at street level equipped with computer terminals for student use. The Cafe will host live bands and other performances in the evenings, as well as provide a forum for conferences, presentations of student work, guest lectures and industry seminars.

The Vancouver Film School enrolled its first class in the fall of 1987, and this January introduced a Classical Animation Program. VFS also offers a full-time Acting for Film & Television Program, and part-time programs in film production, stunt training, wild and exotic animal handling, and film acting techniques, as well as other programs.

For information: Vancouver Film School, (604) 737-0358.

IB Transfer Revived

After a two-year study, Technicolor is launching a pilot project phase to resurrect the imbibition (I.B.) dye transfer method of film processing. The program, which will be conducted in conjunction with the motion picture creative community, will provide a method by which many of the company's new printing and processing innovations can be validated.

The original Technicolor dye transfer process, which was discontinued by the company in 1974, was a photomechanical process in which three-color image dyes, carefully selected for hue and saturation, were physically imbibed from separate dye baths into a receiver film in which the dyes were permanently held in place. Imbibition was introduced to film processing and further developed by Technicolor's founder Herbert T. Kalmus, and was first used in its earliest form in the 1927 motion picture *The Viking*.

For information: Anne Cochran, Bender, Goldman & Helper, (310) 473-4147.

New York Production House

The Hudson Delta Group, located in New York City, is a full-production house dedicated to the production of motion pictures, commercials and music videos. The facility houses four editing rooms, including an Avid, Digital Film, Mega Motion and a traditional Steenbeck, a 24-track recording studio, and shooting and lighting equipment. The Group's principals are Larry Revene, a director of photography; Donald Garland, a composer and sound engineer; and Kristol Cameron, chief editor and digital special effects maven.

For information: Chris Cornell, (212) 242-8800.

Computer Animated Spot

Computer animators and visual effects artists at Rhonda Graphics recently created a character to juggle 24 computer animated Circle K products. Animators modeled 24 three-dimensional products and choreographed the motion the products would follow. Working with the film director, Rhonda Graphics' team participated in the shoot with the juggler at Carefree Studios to make certain they could match the animation to the live action. The animated products were composited over the high-resolution film transfer using Flame software, which also proved invaluable in painting out the contents of a bag of Fritos that exploded during the juggler's live performance.

In addition to the juggler spot, Rhonda Graphics created 3-D products and placed them traveling through a residential neighborhood as larger-than-life-size vehicles in "Grocery Expressway," also for Circle K. A mail carrier dodges an immense gallon of milk in her path and a young bicycle rider stares in disbelief as he is tailgated by an enormous carton of eggs.

For information: Rhonda Graphics, 2235 West Alice, Phoenix, AZ 85021, (602) 263-3939, FAX (602) 263-3577.

Motion Capture Service Centers

Wavefront Technologies has certified five Performance Animation Centers to provide motion capture services for Wavefront customers to use to incorporate performance animation into their productions. The centers have a professional staff with working production experience on Wavefront systems. The typical on-site motion capture process includes setup, actor rehearsal and

Subscribe to a new kind of cable.

Premium channels and pay-per-view aside, this cable system dials up a new era in electrical distribution. An era where safety takes center stage.

Victor Duncan, Inc., in response to changing standards in the production industry, now offers a complete cable and distribution system that meets the requirements of the National Electrical Code pertaining to motion picture studios and similar locations.

All the cable and connectors found in the new system are either UL or ETL listed. The power distribution boxes, both feeder and branch type, are manufactured by Mole-Richardson* and feature grounded circuit breaker protection where required.

As a leading supplier of production equipment, Victor Duncan, Inc. offers the NEC Cable and Distribution System through both its rental and sales departments.

For rental information, contact a lighting rental coordinator. For sales information, ask for a sales coordinator.

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advanced motion digitization. Once the performance is captured and digitized, it is converted into Wavefront Visualizer or Explore format and the client is provided with a tape containing both the raw motion data and the Wavefront-formatted files.

For information: Wavefront, 530 East Montecito St., Santa Barbara, CA 93103, (805) 962-8117, (805) 963-0410.

New York Equipment Rental Office

Atlantic Cine Equipment (ACE), which supplies the full line of Matthew Studio Electronics equipment in the East, has opened a new New York office. The new office is offering check-out sessions with the Cam Remote systems for first assistant camerapersons to enable them to use the equipment without a special operator or technician.

For information: ACE, (212) 944-0003.

Microsoft Buys SoftImage

Microsoft Corporation has acquired Softimage of Montreal, the developer of 2-D and 3-D computer animation and visualization software. Daniel Langlois, chairman, chief executive and founder of Softimage, will join Microsoft as senior director of advanced authoring tools. The new advanced authoring tools product unit includes the Softimage product line as well as a family of multimedia authoring tools previously under development at Microsoft. Langlois will oversee both the Montreal and Redmond-based development sites.

For information: SoftImage, 3510 St. Laurent Blvd., Montreal, Quebec, H2X 2V2, (514) 845-1636.

Morphing Soda Spot

In a humorous new A&W Cream Soda spot, a 10-year-old boy morphs into a 90-year-old man courtesy of Telezign Computer Animation/Design. Telezign designed and produced the effects for the spot, which was produced by Curious Pictures and directed by Glen Claybrook.

The complex live-action morphing is the focus of the spot (both :15 and :30 versions), which tells the story of a boy at school who's antsy about his class ending so he can drink an A&W cream soda. The endless class results in his gradual metamorphosis into a 90-year-old. The class bell restores his youth and he bolts out the door for the soda.

Under the direction of Telezign's Joe Shingelo, designer/animator Dave Finn headed up the team that created the effect. "The interesting twist was that the client wanted a moving morph," said Finn. "The character is constantly in motion as he changes from age to age." Three actors and some make-up effects were employed to produce the needed elements for the morph. From there, Finn created texture maps that matched the contour of each actor's face and served as a transition between each distortion and dissolve. "The client needed a very believable, though slightly cartoonish, feel for the morph," said Finn. "That was done smoothly, as we had a consensus on the vision for the spot." Telezign also composited cel animation and live action in the HAL to complete the believable transformations.

For information: Telezign Computer Animation/Design, 460 W. 42nd St., New York, NY 10036, (212) 564-8888, FAX (212) 867-0691.

Video Search Facility

A Million and One World-Wide Videos buys, sells, trades, rents, brokers and auctions every video in the world, and will search for any title for free, given a firm bid with a credit card, the title and the name of the star or director. For $2.00 they will provide a list of the titles of the star's or director's videos. WWV has a worldwide network of collectors from whom they obtain most titles and if the source is in the U.S., delivery takes about a month. The company also locates videos on special interests such as businesses, hobbies, how-to, documentaries, etc.

For information: WWV, Orchard Hill, GA 30266-0349, (800) 849-7309, (800) 849-0873.

Panavision Acquisition

Panavision New York has acquired the photographic and lighting equipment rental business and assets of General Camera Corp. and will continue to do business at 540 West 36 St., New York City. Panavision New York will have available for rental all of the newest and most advanced Panavision cameras and lenses. The company rents photographic equipment, including cameras, lenses and accessories, as well as lighting and grip equipment, cranes and dollies, to producers of feature films, commercials and television shows.

For information: Panavision New York, (212) 594-8700, FAX (212) 564-4918.

Industry Online Service

The Vine, an online service designed for the entertainment industry, is an electronic mail and conferencing system providing communications and information services to entertainment companies, executives, freelancers, and other professionals. Members can use the computer-based service to keep up with news and developments, hold public or private meetings, promote or distribute goods or services, and locate talent for projects. The Vine offers a resume database for acting, writing, music and production talent, public and private conferencing areas, online newspapers and magazines, and an area called Office Suites rented by a variety of companies and organizations. The Vine is also connected to the Internet through an e-mail gateway that runs every half hour, allowing any full Vine member to partake of the Internet's vast information resources and giving him or her an Internet mailbox.

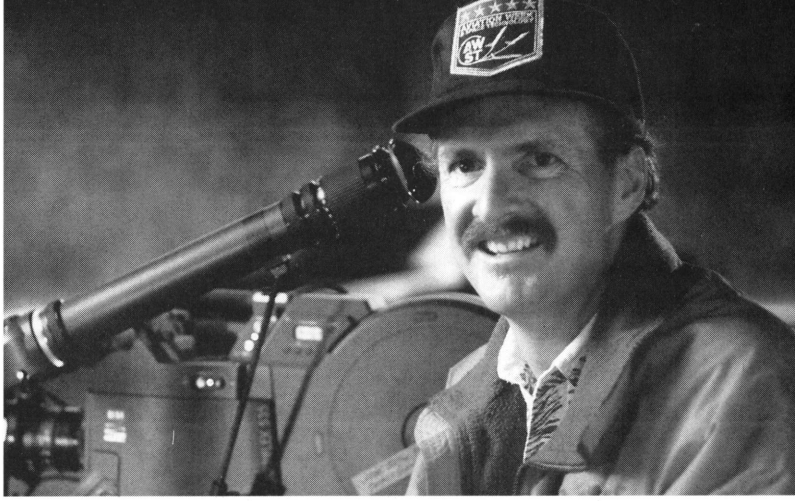
The Vine gives each user a Macintosh or Windows "front end," which the user installs on his or her own computer. This program has its own built-in telecommunications software and contains the graphics, sounds, and mouse-driven interface that gives the Vine its unique look and feel. Anyone with a modest amount of computer experience can begin to use the system immediately.

The Vine is a 24-hour-a-day service, down only for 2 ½ hours each week to make backups of all stored information and mail. It operates on a battery of high-speed 14,400 bps modems. It offers a wealth of reference materials, an extensive software library, plus conferences for writers, actors, musicians, production crafts people, and interactive media producers who want to share information and skills, get leads, or just commiserate.

The Vine allows subscribers to make contact with a much broader network of people, friends and like-minded groups. The Vine carries hun-

ANGENIEUX ZOOMS IN

Bill Bennett on the Move with Angenieux.



Director of Photography William F. Bennett has shot national television commercials for such clients as Exxon, Mercedes Benz, Volvo, Saab, Coca-Cola, Sony, AT&T, McDonald's, and the U.S. Postal Service.

As a 1995 Lexus Coupe speeds across the desert floor, the camera tracks along the grill, sweeps down the driver's side, around the back bumper, then along the passenger side—the car now silhouetted against the afternoon sun—and around to the front of the automobile once more.

Angenieux 17-102mm T2.9

A New Angle.

Behind the camera for that amazing 360° move was DP William F. Bennett, veteran of numerous award-winning Lexus commercials. And the lens he selected for that challenging shot was the zoom he's come to depend on day after day—the Angenieux 17-102mm T2.9.

Hot Edges.

"At times we were shooting directly into the sun, and it was crucial not to get big flaring off the sheet metal," explains Bennett. "With the Angenieux 6X17, I had no fear of objectionable blooming. I use a lot of hot back light—a real test of a lens' performance. If the optics can't deal with hot edges coming back at the subject from very close to the edge of the frame, the result is lousy color. This is never a problem with the Angenieux."

Absolute Confidence.

For "Go Around", Bennett mounted camera and lens in a Gyrosphere helicopter mount—another reason, he says, for choosing the Angenieux 6:1. "When you are remote and have to rely on video assist rather that your own eye at the finder, it's essential that the lens is of robust construction. The video assist is useful for framing, not focus," notes Bennett, "So if a lens were to lose focus or begin to break down mechanically, you may not find out until dailies. The rugged 17-102mm has never cost me a shot."

Covered with Sand.

On another location shoot—this time in Monument Valley—Bennett was astounded by the impenetrability of the Angenieux's sealed housings: "When a sandstorm blew through in the afternoon, we had to leave equipment set-up for a sunset shot. We wrapped the camera and Angenieux zoom in plastic, but the 50mph winds tore the covering away. When the dust settled, there was 1/4" of powdered sand all over the top of the lens, but we brushed it off and it functioned flawlessly!"

"They never let me down."

Bennett trusts Angenieux. Owner of both the 6X and a 25-250mm HR, he explains, "Angenieux zooms are reliable, rugged, sharp, and flareless. They've held up consistently, both optically and mechanically, under the worst conditions—being slammed around by the airfreight companies, hammering along on the back of a camera car doing 60 down a rough mountain road, being used in dusty and humid environments. These days, a film crew has to work efficiently to accomplish what's expected by today's budgets. The quality and dependability of the Angenieux zooms enable me to do just that. They're tremendous tools."

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"Go Around," featuring the 1995 Lexus Coupe, was directed by Gary Johns and photographed by William F. Bennett for Team One.

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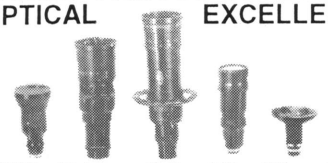

WIDER: 16:1.9mm f/1.9 - 197°, 5.7mm f/1.8-97°, 9mm f/1.5-70°; 35: 9.8mm f/1.8-108°, 18mm f/1.8-74°.
CLOSER: Macro-Apochromats 50mm f/2, 75mm f/2, 100mm f/2, 150mm f/2.5., focus from infinity to 1:1.
FARTHER: 210mmf/2.8, 300mm f/3.5, 500mm f/5.6, 1000mm f/8.
MORE THAN 30: Apochromats, from 1.9- 1000mm, Arri, Aaton, BNC, C, Eclair, Photosonic, other mounts.
ULTRA LUMINOSITY: Finest optics with special Lanthanum glass, high refractive power, wide aperture, all-surface coatings.
NEEDLE SHARP DEFINITION: Minute details up to corners, without distortion, even at full aperture.
RICH, ACUTE CONTRASTS: Subtle grey tones, with deep satiny black, for complete scale of authentic tonal values.
PRECISE COLOR FIDELITY: Apochromats are reproducing all three primary colors into filmplane, equi-distant T/stops, perfectly color matched lens sets.
PERSONAL SELECTION: Each lens is custom ground, 100% quality controlled, and bench tested.
UNCOMPROMISINGLY SOLID: All Light-metal precision construction, for lifelong durability.
MINIMAL SERVICE QUOTA: Less than 1/10%, like the Maytag repairman.
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dreds of Usenet Newsgroups, the Internet's conference groups, which have millions of participants worldwide. The Newsgroups are fed many times per day, along with incoming and outgoing Internet e-mail. Current newsgroups cover reviews of current books, comics, movies and television as well as new media and multimedia developments. The group called "rec.arts.movies" maintains a searchable movie credits database that can be accessed through the Vine's e-mail connection.

The Vine uses a townsquare metaphor in its structure and design. Most of the action is centered in an area called "The Plaza," where the user finds the Library, the Newsstand, Office Suites, and areas for public conferences and private conferences. In addition, there's the "Digital Cafe," where people can engage in live public chatting.

The fastest growing area of the service is the Office Suites, where such organizations as Avid Technologies, the Hollywood Creative Directory, the American Film Institute, and the Los Angeles Film Festival have already signed on. Office Suites offer companies what amounts to their own private computer bulletin board system. The entire AFI course schedule is now online, and Avid offers technical support to its registered users in their suite. Each organization controls access to its own area.

In addition to text, the Vine allows users to view graphics or photographs online. This can be useful for an actor who wants to attach a head shot to his or her resume, or for a State Film Commission that wants to make photos of various locations available to producers and location scouts.

For information: (213) 957-1990.

Amateur Filmmaker Competition

The Newz, a cutting-edge, late-night comedy TV show, is seeking submissions from amateur filmmakers around the world. Selected footage will be showcased on this national television series and once a week the cast will choose "The Newz Pick of the Week" from the best or funniest submissions received. The name and city of the "Pick of the Week" winner will be announced on the nationally televised show.

The Newz is a half-hour of comedy sketches based on topical news events and targeted at viewers in the 18-to-35 age range. The syndicated show airs five nights a week on more than 130 stations nationwide.

Photographers can submit their work in any format: D-2, Beta SP, Beta 3/4", Super VHS, VHS or Hi-8. The News will be looking specifically for footage that falls into two main categories: news-style stock shots (skylines, panoramas, monuments, local landmarks, unique or recognizable buildings, local sports icons and facilities, well-known events such as parades/festivals, newsmaking events such as crimes, disasters, historic events/reenactments, celebrities and politicians) and comedic shots (anything and everything). Stock footage will not be accepted without a signed submissions release.

For information: *The Newz* Submission Line, (407) 354-6590.

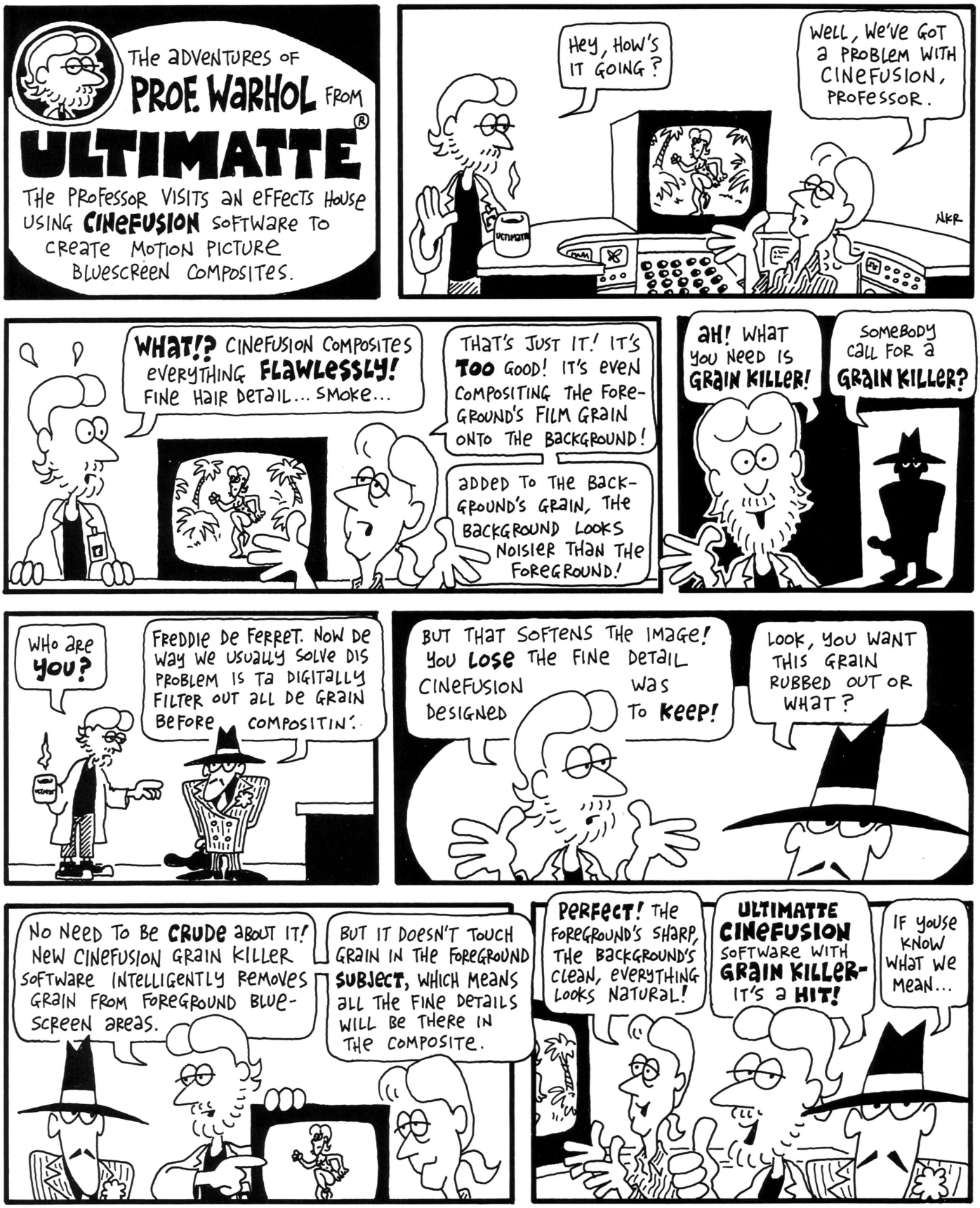
New Digital Division

With the installation of two high-resolution Cineon digital film systems with film scanner and recorder, Pacific Ocean Post has created a new division of its postproduction facility to service the feature film visual effects market. Heading up the new film division, POP Film, will be executive producer Jay Ignaszewski, who was supervising editor of live action and visual effects for the Luxor Hotel and Casino film-based theme rides, produced by the Trumbull Company. He was also visual effects editor on the Academy Award-winning features *Total Recall*, *Return of the Jedi*, *Star Trek III* and *Indiana Jones and the Temple of Doom*.

Making up POP's effects and compositing team are visual effects producer Andrea D'Amico, director of visual effects Ron Sabatino, compositor and colorist Mike Pethel, and Harry artist Simon Haslett.

The Cineon workstations will run on multiple platforms of Silicon Graphics Onyx supercomputers, which will also support Discreet Logic's Flame and Flint software, as well as Alias and Matador software. Since the Cineon workstations are interoperable with other computer tools used at POP, the facility can offer parallel processing at all levels of resolution.

For information: POP, 730 Arizona Ave., Santa Monica, CA 90401,


The adventures of PROF. WARHOL from ULTIMATTE®
The Professor visits an effects house using CINEFUSION software to create motion picture bluescreen composites.
Hey, how's it going?
Well, we've got a problem with CINEFUSION, professor.
NKR
WHAT!? CINEFUSION composites everything FLAWLESSLY! Fine hair detail... smoke...
That's just it! It's TOO good! It's even compositing the foreground's film grain onto the background!
added to the background's grain, the background looks noisier than the foreground!
AH! What you need is GRAIN KILLER!
Somebody call for a GRAIN KILLER?
Who are you?
Freddie de Ferret. Now de way we usually solve dis problem is ta digitally filter out all de grain before compositin'.
But that softens the image! You lose the fine detail CINEFUSION was designed To keep!
Look, you want this grain rubbed out or what?
No need to be CRUDE about it! New CINEFUSION GRAIN KILLER software intelligently removes grain from foreground bluescreen areas.
But it doesn't touch grain in the foreground SUBJECT, which means all the fine details will be there in the composite.
PERFECT! The foreground's sharp, the background's clean, everything looks natural!
ULTIMATTE CINEFUSION software with GRAIN KILLER- it's a HIT!
If youse know what we mean...

Cartoon by Keith Robinson/Making It Productions, 310-379-4345

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For information: (800) 956-0300.

Stock Footage Library Expands

The Image Bank has acquired Petrified Films, one of the largest and most varied private stock footage libraries specializing in material dating from the 1920s to the 1960s, and has joined forces with Kodak Picture Exchange, an online visual image database system from Eastman Kodak Company. KPX is offering still images online and will soon carry the Image Bank's film footage for digital search, retrieval and downloading online.

Petrified's holdings total over 300,000 separate rolls of stock material, created over a fifty-year period by Warner Bros., Columbia Pictures, and various industrial production companies, and include more than 6,000 cans of the work of premier Hollywood cinematographer Elmer Dyer, ASC. Petrified Films will be loaded onto the Image Bank's exclusive interactive computer system Image Index, which can search and retrieve footage in seconds.

The company has also launched ARAMS (Archive Research and Management Service) with the signing of Euro-Aim's efforts to market and support European film and television productions.

For information: The Image Bank, 111 Fifth Ave., New York, NY 10003, (212) 529-6700.

Bluescreen Facility

Mr. Film has opened the Blue Room, a full-feature bluescreen production studio equipped with a bluescreen stage and a motion sensor body suit connected to real-time graphic generators. The Blue Room is designed for digital compositing and computer animation productions.

The body suit employs magnetic motion sensors distributed on the body. Actors wearing the bodysuit perform on the bluescreen stage. A virtual reality background is loaded into the computer so that the actors and the director can see the performance in relation to the digital scene. This technique is aimed at making computer animation of program-length material more financially feasible.

Mr. Film is also featuring a motion-controlled, programmable, digital background animation system, combining the talents of various scenic and matte painters with computer-generated images. This allows matte paintings and miniatures to be used as real-time reference plates for matting and digital compositing of live action and synthetic characters.

For information: Mr. Film, 228 Main St., #12, Venice, CA 90291, (310) 396-0146, FAX (310) 396-5061.

Academy Foundation

A two-year pilot program to fund internships for graduate students at five target film schools has been launched by the Academy Foundation, the educational and cultural arm of the Academy of Motion Picture Arts and Sciences.

Six internship proposals have been funded at $5,000 a year for two years. Two internship programs have been funded at the University of Southern California, one with the School of Cinema-Television and the other with the USC Master of Professional Writing program. The other four programs are at California Institute of the Arts, UCLA, Columbia University and New York University.

Each school will structure its internship program differently, and so 24 internships will be available — nine at CalArts, five at USC-MPW, four at USC School of Cinema-Television, and two each at the remaining three schools.

At the end of two years, the committee will evaluate the results to see whether the pilot program should be modified, extended unchanged, or canceled.

All grant monies are to be used directly by the Academy Interns and can be used as stipends and/or as funding for travel expenditures, temporary housing, or per diem during the period of the internship.

For information: The Academy of Motion Picture Arts and Sciences, 8949 Wilshire Blvd., Beverly Hills, CA 90211, (310) 247-3000.

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Brian J. Reynolds | Director of Photography, NYPD Blue

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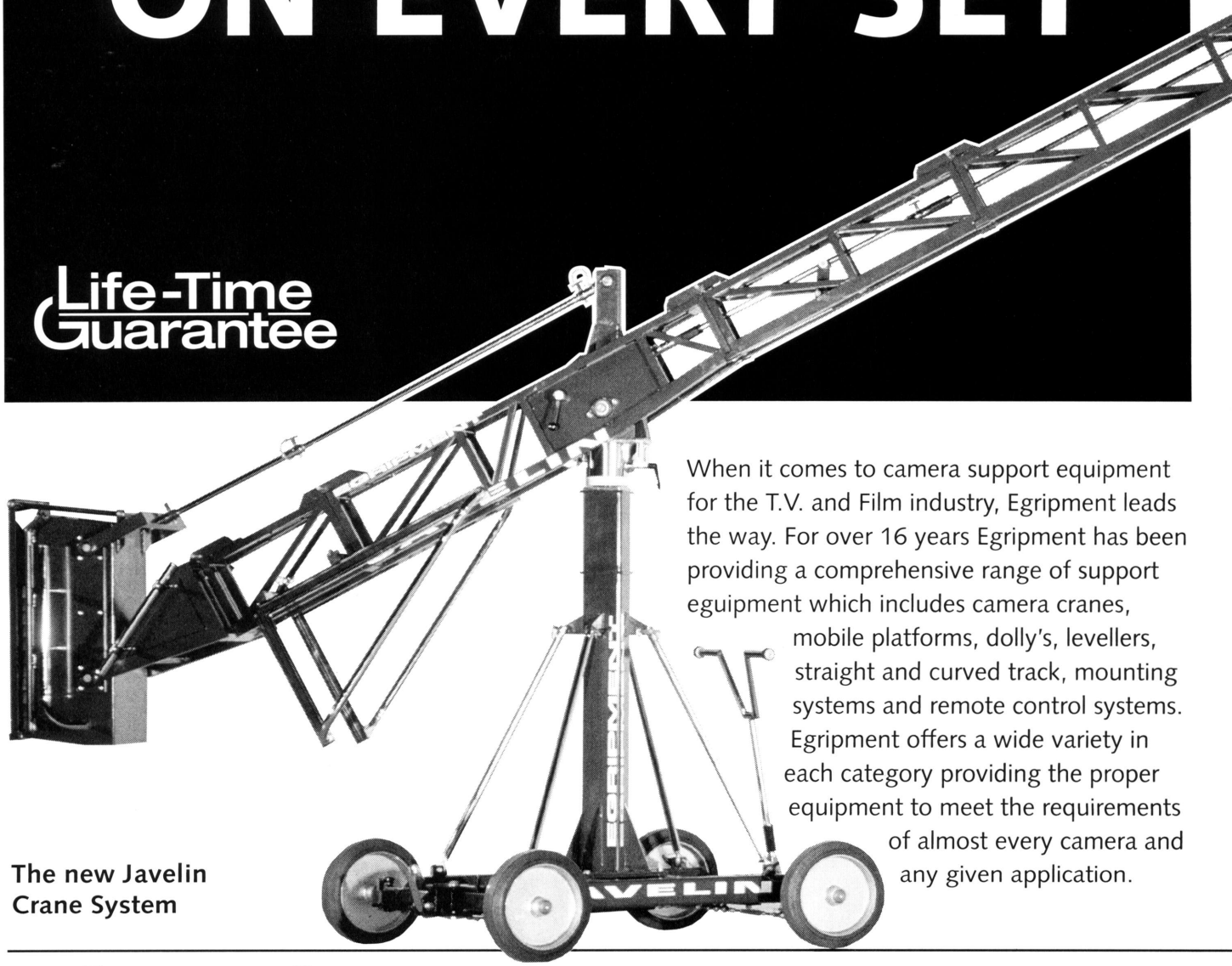

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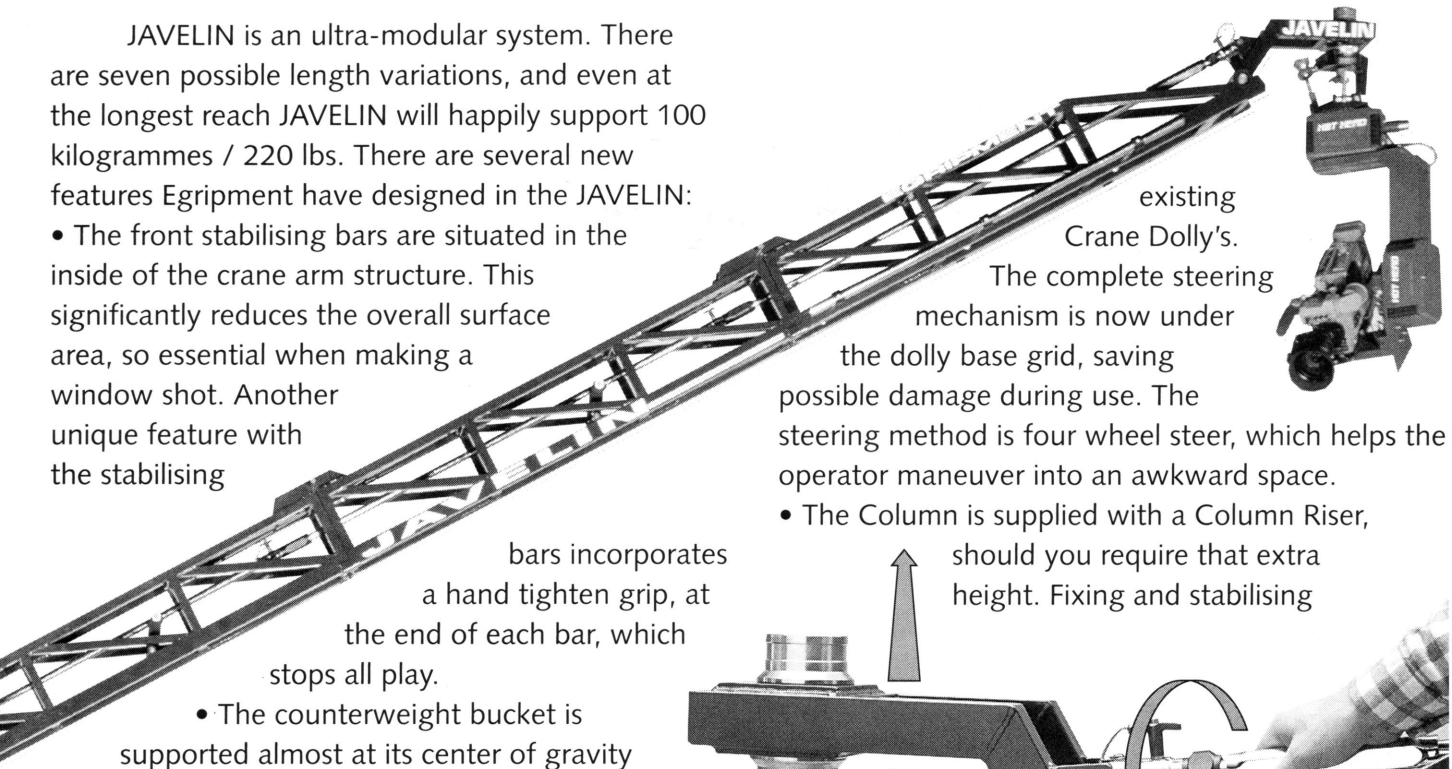
• The counterweight bucket is supported almost at its center of gravity and, therefore, the tension in the parallel bars is very low. This gives you an equal wheel load which, in turn, means ultra safety and stability

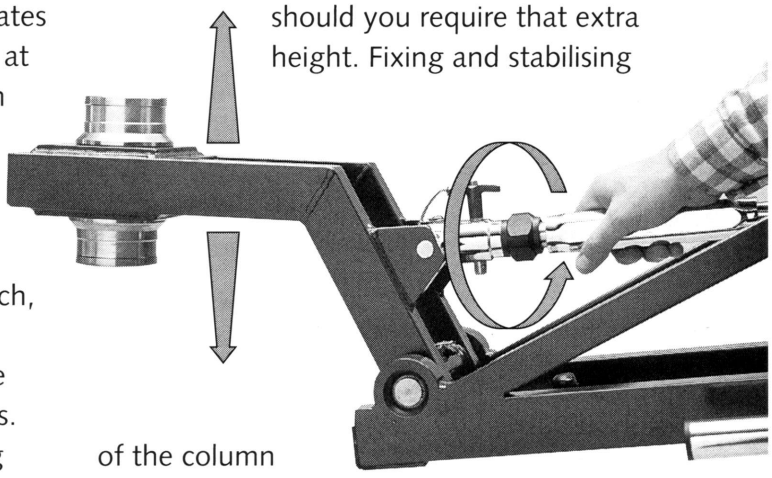
• The crane arm is supplied with handbars for the front and back end, and with pan and tilt markers.

• The very front hand grip actually assists making the " L " bracket level.

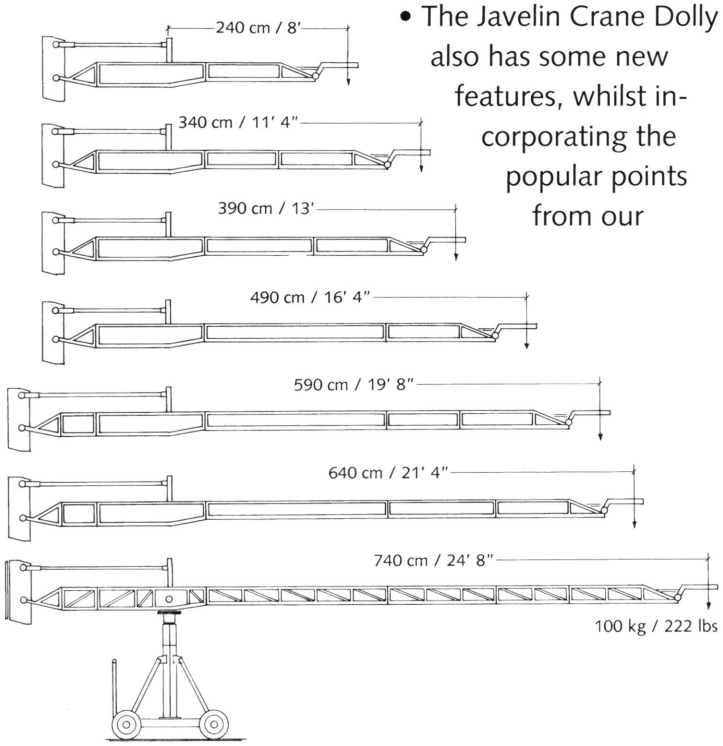
• The Javelin Crane Dolly also has some new features, whilst incorporating the popular points from our existing Crane Dolly's. The complete steering mechanism is now under the dolly base grid, saving possible damage during use. The steering method is four wheel steer, which helps the operator maneuver into an awkward space.

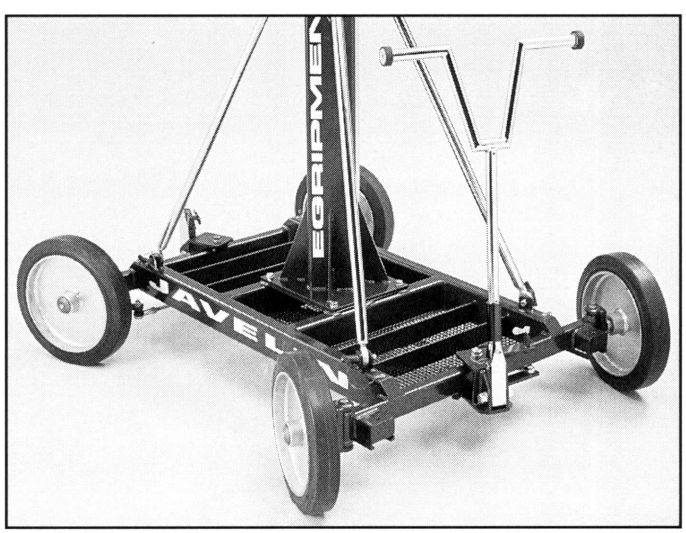


• The Column is supplied with a Column Riser, should you require that extra height. Fixing and stabilising of the column is as simple but safe as all Egripment Crane Systems.



With all these improvements, features and additional extras, the new Javelin Crane System is a solid support you can count on.





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Photos by Sean Casey and David Owen, courtesy of Industrial Light & Magic

3M's "Imagine" Ad Dazzles Eye of the Beholder

ILM helps commercial filmmaker Steve Beck create a symphony of surrealism.

by Ron Magid

It's no secret these days that some of the best imagery around can be found in commercials. One of this year's most intriguing spots is Industrial Light & Magic's "Imagine" for 3M. A man stands before his workstation in a grassy field as a series of remarkable images flow from his imagination: a soaring jet, whose steel frame is constructed using a powerful adhesive, transitions into a human eye whose iris becomes a dark roadway where a cyclist wearing reflective tape narrowly avoids being hit by an oncoming car. In the literal blink of an eye, we're back in the grassy field, where a painting of white gloved hands comes to life and assembles a trumpet, an airplane and other objects into a compact disc which itself becomes a bank vault; this image then dissolves back into the field, where many people are now working at numerous workstations surrounding a painting of the bank vault as clouds soar overhead. Naturally, the extraordinary adhesive, the reflective tape and the CD-ROM disc are all manufactured by 3M. But their presentation, courtesy of ILM's commercial division and ace director Steve Beck, is exquisite; the spot effortlessly transitions from one seemingly unrelated image to the next with the quick-paced flow of a dream.

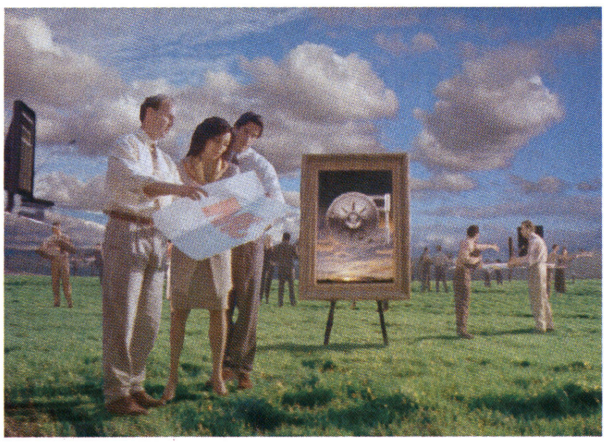
The spot showcases Beck's distinctive style, which inevitably is high-concept, low-verbiage and overflowing with imaginative visuals. (He recently directed an Acura ad called "Hot Wheels," wherein the real car is test-driven on an oversized toy track, and Merrill Lynch's "Risk," which features a bull bravely trotting from steel I-beam to I-beam on a skyscraper under construction.) "My spots don't require a lot of live action; they're always about the overriding communication," Beck says. "The concept is the spot. It's almost like I'm designing a fourth-dimensional illustration."

Beck's journey into other dimensions took him into territory usually left untrodden by corporate sponsors. "Imagine" has the surrealist quality of a living Magritte painting, blended with an earthy naturalism. The result is unique, completely avoiding the corporate sterility traditionally associated with such spots while portraying 3M as a company at the head of its field. "That became a little visual joke, because [the '3M people' in the ad] are literally portrayed as standing in their field," Beck says with a smile. "The original concept was more stark and barren, and pushed the surrealism much further. We had many more homages to the surrealists, and some really striking compositions. But we realized that it had to be a little softer, a little more daydreamy, so we opted for a more humanistic surrealism with fields of green and lots of billowing fabric, which added a gentle naturalism to the framework of the spot."

The essence of the "Imagine" spot is a living collage, which is exactly the effect Beck intended. The self-labelled "director-designer" first conceived the 30-second spot as modular. That way, using the existing framework of "imagination" (visualized as someone working at a drafting table in a grassy field), 3M would be free to plug in any products they wished and tailor the spot for specific markets. "We wanted to be able to sell the European continent and the Asian countries different products," Beck explains. "We shot both Caucasian and Asian talent for the endpieces, and we

figured we'd just come up with a new center section if and when necessary."

Of course, it might be a bit problematic getting the unrelated products to flow together as smoothly as they do in the original spot. The effect wasn't as effortless as it appears. "All the agency handed us was the logo tag and the three products," Beck recalls. "There are five different segments, which is a lot to cram into a 30-second spot, so we had to get from product to product rather quickly. I didn't want anything to impede the flow, but we did run into some problems, so we relied upon a few obvious tricks to retrofit our designs and make them flow."



Opposite: ***The iris of an eye provides an appropriately arty transition point.*** **This page:** ***3M's forward-thinking staffers discuss the future in a grassy field filled with workstations. The field was shot as a background plate and the actors filmed against green screen; the images were later composited via computer.***

Beck envisioned a series of dissolves dramatizing 3M's leaps of imagination. The segments would simultaneously seem both quickly paced and unhurried. Achieving that paradoxical balance required a great deal of previsualization using the latest electronic tools. "We started by pencilling out some ideas," Beck remembers. "Once we designed everything, we threw it into the Mac cameras in editorial and started laying down rough animatics to see if they would fit, doing a rough read on the CMX and then getting timings. Effects work is a lot less intuitive; it's pretty anal work, and we had to think things through pretty thoroughly in order to make sure it all fit together. It's not like going out and shooting a bunch of beautiful photography and having a basic premise for your editorial approach; our [spots] are like designing a puzzle and putting it together, which requires quite a bit of thinking. This can sometimes take the fun out of it, because you can't say, 'Let's try this'; it's more like, 'We have to stick with the boards because this fits into this, which fits into that.' And there's only a certain amount of time to make it all happen."

Helping Beck to fit all the pieces into the allotted time frame was electronic editorial supervisor Dan McNamara, who worked from the director's elaborate storyboard animatic to plot many of the transitions before a frame was shot. Says McNamara, "Once production ended, Steve and I did the live-action cut first, going through the material, picking out the right pieces and determining the correct timings to make it all work. Originally, we were going to return to the grassy field three times, but in the final version, we decided to eliminate a scene to give more time to some of the transitions."

Beck had initially planned to film his actors in the grassy field for each cut of the framing sequence, but due to inclement weather, he ended up shooting the field as a background plate and shooting his people against greenscreen. That made Beck's direction a bit more ephemeral, since his settings and his actors weren't in the same place at the same time until the footage was scanned into the computer and digitally composited. "This spot relied much more upon design than performance," Beck explains. "If I stayed within the design parameters I'd outlined, I was confident one piece would fit into another, which would also fit into another. In a certain sense, everything, including actors, became a prop. The way the elements came together, we had a bit of flexibility in terms of slipping timings and syncs to get the actors to respond to what was happening around them. We did some time compression to get our effects elements to go faster or slower according to what take was the best from the actors' point of view."

After the actors were composited into the field, McNamara also added the sky, filled with racing clouds, behind them as a separate element. "This spot was unusual for ILM because it was not too heavy on motion control," McNamara says. "There were lots of layers, lots of transitions between elements to effectively create that surrealist environment, like a moving Magritte or Dali painting."

As he was shooting, Beck had to somehow keep in mind all the different events that would happen later in editorial. "Since so much of the spot involved greenscreened people, paintings and all kinds of stuff on top of

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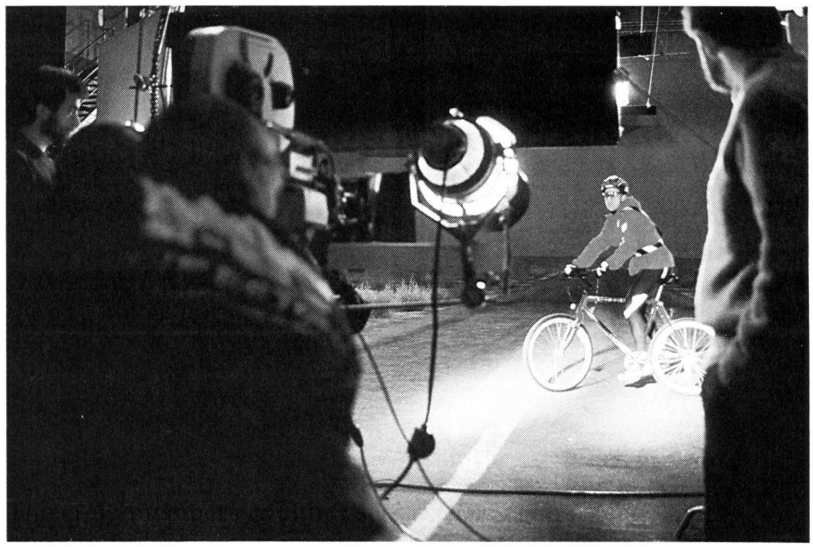


Above: ***ILM's crew records a bluescreen shot of a bicyclist.*** **Right:** ***Beck offers a detailed explanation of his storyboards to his clients, staffers from the Campbell-Mithun-Esty agency.***

that," Beck says, "we relied on our storyboards to keep things straight. All that compositing became a Dagwood Sandwich kind of thing, and it got pretty high!"

One of the tastiest of those complex Dagwood-esque transitions involves a painting of an aircraft that appears in the grassy field. The plane suddenly flies right off the canvas toward camera; when the jet's wing fills the frame, a human eye appears within its engine as the plane dissolves away and the eye takes its place. To accomplish the sophisticated match-move and dissolve, a miniature aircraft and an articulated oversized model of an eye were shot on ILM's stage. "We decided a real eye might be too unattractive if we got really close, so we were better off building a large eye model," McNamara says. "Since both models were shot on the same stage, we just duplicated the motion-control move on each miniature so they'd match perfectly and the jet engine would transition seamlessly into the eye."

There was still a question about just where and how that transition should occur, however. "Steve and I decided that rather than just travelling through the engine into the eye, we wouldn't let them get quite that far before we dissolved them out," McNamara explains. "I think those unusual transitions add a lot to the spot. Not only do they keep things moving, but it doesn't feel like you're just travelling through something; instead, it's much more dreamlike if things disappear as you get almost there but not quite." Another subtle touch was the sky growing stormier as the jet engine dissolved into the eye.

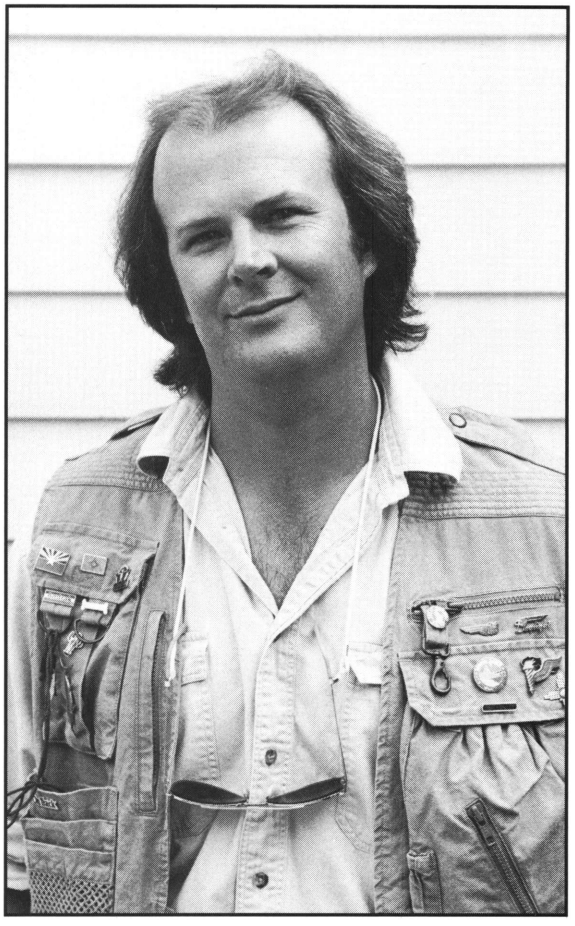
Next, the eye filled the frame as its iris and pupil pictured a bicyclist on a dark road

David Darby has been a Director of Photography since 1985, shooting commercials for such products as Acura, Chevrolet, Ford, Kodak, Lowenbrau and Mercedes Benz.

"I asked Clairmont for a unique graduated filter set. *They had it made.*

I needed exposure compensation for an untried macro bellows rig. *They read it on their MTF machine.*

I asked them to motorize a gear head, for a series of very slow, very-long-lens pans. *They built it.*"



David Darby, Director of Photography

"After two weeks on location, shooting slow pans of the horizon, you begin to hallucinate," says David Darby.

"The job was a series of Amtrak commercials. The idea was to shoot the scenery you can *almost* see from the train. Backlit mountains five miles away—almost abstract shapes. Shot from near the track; all panned as slowly as physically possible."

Robot needed

"To dissolve together well, the various pans also had to be *consistent* in speed. But we were shooting them on different days, in different places, with different focal lengths. At the end of the first shoot, we were exhausted."

Modified zoom motor to make pans

"So I asked the Clairmonts: Is it possible to motorize a gear-head? They came up with a rig that drove gears where the panwheel would normally be. Any speed we needed, precisely repeatable, perfectly smooth."

"They built two of them, just for our next Amtrak shoot. When we switched those things on, out near the Columbia River, we were ecstatic. We *applauded*."

The Big Z

"One morning, on a Nissan 300 ZX commercial, we were to shoot a typewriter key hitting the paper. The capital Z it printed had literally to fill the frame."

Improvised rig

"After the Director had sorted through a dozen typewriters, it turned out that my old macro lens, along with a bellows from Clairmont *and* some borrowed extension tubes, gave us the shot. By now it was lunchtime and I had no idea how many stops I was losing."

High tech help right away

"So when the crew broke for lunch, I drove over to Clairmont with my lens, their bellows and the tubes. Denny immediately put the whole rig up on his MTF machine: six stops. I thanked him (for about the two hundredth time) and ran back to the stage. After lunch, we made the shot."

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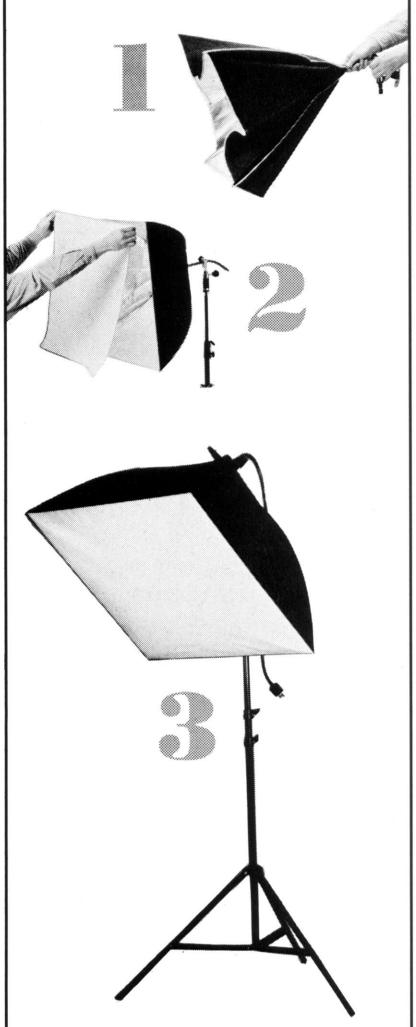

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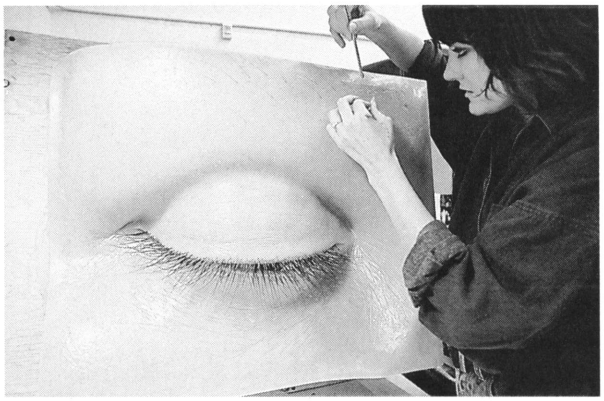

Makeup artist Jean Bolte applies finishing touches to a fully articulated model of a blinking eye.

pedalling towards the camera. "That was done using the same model eye, which was three-and-a-half feet in diameter and had a removable iris so we could do different motion-control passes," McNamara relates. "First we did a beauty pass for the overall image and color of the eye, then we had a pass for the blink, which was mechanical, and lastly we replaced the color iris with a bluescreen iris for the matte pass."

Again, before the camera could move all the way into the iris, the eye dissolved out as the camera travelled rapidly towards the cyclist on the roadway as if in a car; suddenly the "car" hit its brakes and the image bobbed up and down. The vignette was designed to show the efficiency of 3M's reflective tape in preventing bicycling accidents; to the pleasant surprise of the ILM team, the product worked as well on their motion-control stage as it did out in the streets. "It's pretty amazing how well that stuff works," McNamara marvels. "We got very bright reflections off the tape when we shot the cyclist on our road set against bluescreen. Our travelling camera move, which was supposed to be the point of view of the car driving down the road, actually ended in a bobble to simulate the brakes of the car being hit.

"We then composited the moving cyclist on the road element with a digital matte painting of the full moon and some extra hills," he adds. "We used some specialized software to track the digital matte painting to the live-action bluescreen plate so the zoom push and camera bob would match. We offset the matte painting slightly to create a feeling of parallax and depth so it didn't look like a 2-D image. First we did a match-move to offset the position of the bicycle plate; then we did an overriding move on the moon, so as we come into it, the moon doesn't change position at the same rate as the cyclist. Lastly, in post, we tracked and followed the motion-control move in the bicycle shot to match-move it into the eye's iris. It was a lot of work for a really short shot, but it's pretty effective."

Once the bicycle pulled up full-screen, Beck and McNamara used another blink of the model eye to transition back to an ornately framed painting depicting a pair of white-gloved magician's hands and several objects on a black background. The image suddenly comes to life as the gloved hands assemble a trumpet, an airplane, scotch tape, a house and a mathematical formula into a CD-ROM disc. "The hands were shot here on stage, along with the CD, against a black backdrop," McNamara says. "We replaced that with a starfield backdrop and back-tracked from the CD to orchestrate the timing of the different computer graphics objects as they resolved into the CD."

The CD dissolves, becoming the door to a bank vault, which a gloved hand spin-locks. The image is then transformed into a painting of a vault in the

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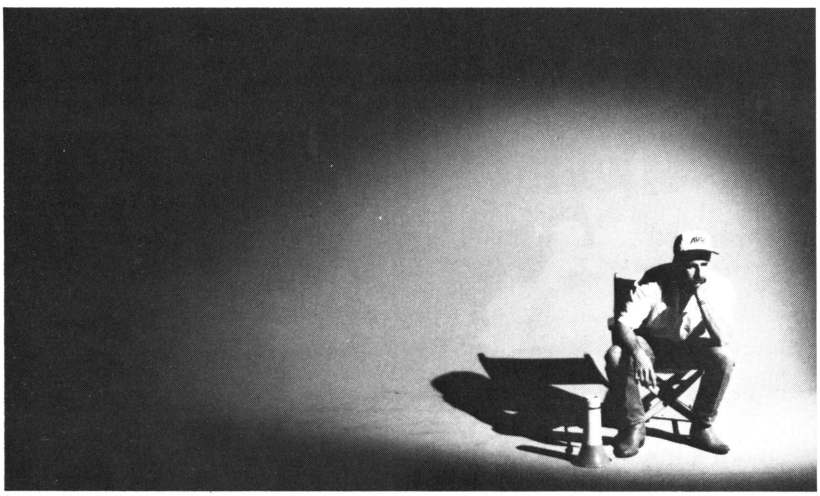
grassy field, surrounded by many more of 3M's creative people. "The vault was a little miniature which was about the same size, and was shot at the same time, as the CD," McNamara explains. "Wherever we could, we tried to do things in production. After the hands closed the vault, we transitioned back to the live-action plate of the grassy field environment again, but at that point there were lots of people out there at their drafting tables or workstations in the background. We also had a main group of people having a conversation in the foreground. Each person was composited in the scene, and the clouds in the sky were racing by, so there are actually about 30 layers in that final framing sequence."

Director Steve Beck hoped to add one more stylistic twist to his already elaborate spot. "The spot was originally shot in color, composited in black & white and letterboxed," he reveals. "The idea was to make the opening black & white, then segue into the imagination with color — like Dorothy going to Oz — then coming out to black & white again for the ending. But the agency and the client decided to go for full color all the way through because it was such a rich composite."

"Imagine" loses nothing in its full-color version. Its fantastic imagery and dreamlike, slow-motion rollercoaster transitions mesmerize even on repeat viewings. Musing on the key to his success, Beck says, "I always tell my clients that any thing's possible as long as you give it some thought before you go out. It's all about design to me."



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ENTRY DEADLINE AND SUBMISSION REQUIREMENTS:

Cinematographers proposing their work(s) must complete an **entry form for each category** entered. The **deadline** for receipt of entry forms in the offices of the ASC is **Monday, January 2, 1995 by 12:00 noon.** *(DO NOT send a videotape of the program with the entry form.)*

Cinematographers who are **nominated** for awards in the television categories shall be required to submit a videocassette of their achievement(s) in ¾", VHS or Beta format for viewing by members of the American Society of Cinematographers. The tapes of nominated programs must be in the same form and content as originally broadcast; however, commercials, announcements, news breaks and other non-germane material must be deleted.

CRITERIA FOR TELEVISION ELIGIBILITY:

A program is eligible providing it was originally broadcast on television within the United States on a commercial network, a publicly-sponsored broadcast system or cable outlet between **January 1, 1994** and **December 31, 1994.**

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The definition of a regular comedy or drama series is a minimum of three original programs that aired during the awards year. The theme, story line or principal characters must be predominantly featured in multiple episodes. The series must be presented under the same title and each program must be related to the others. A series must have a continuity of executive supervision and/or production personnel so that it is thought of as a whole rather than individual parts. A group of programs that carry a main title (i.e. "tent" or "umbrella") but are, in fact, composed of various sub-units, will not be considered eligible as "a series."

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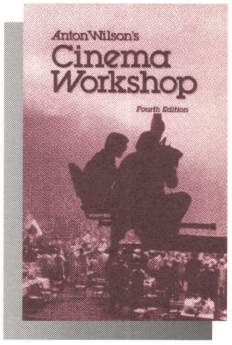

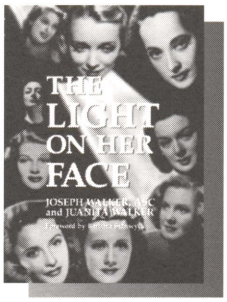

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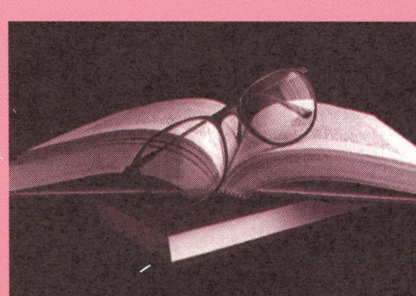

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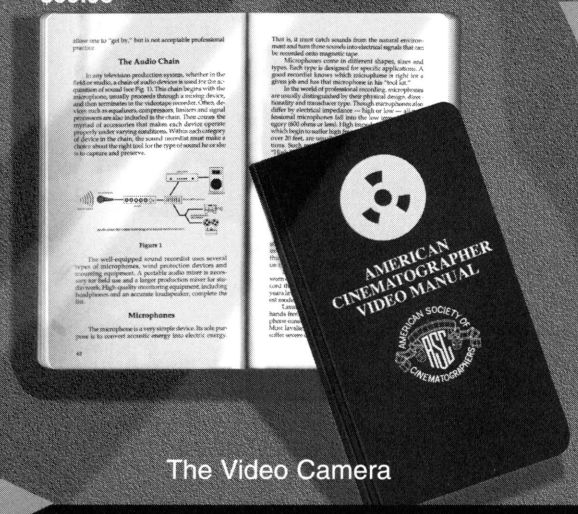

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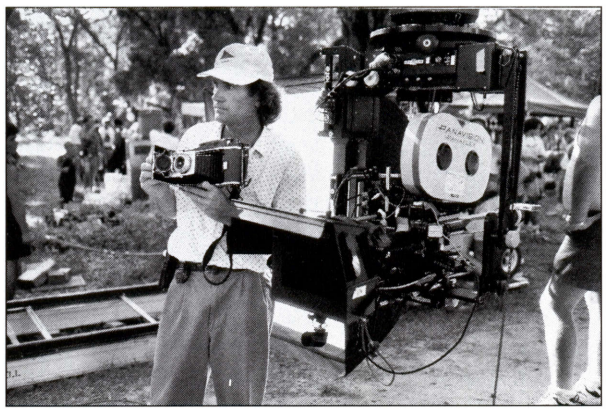
Filmmakers often try their hand at interpreting real-life events, but never has the language of film been used so specifically to rewrite history as it has in *Forrest Gump*. Described by director Robert Zemeckis as a "docu-fable," the film spans four decades in the life of a dim-witted innocent (Tom Hanks) whose destiny guides him through a series of extraordinary adventures that include personal encounters with such cultural giants as John F. Kennedy, Richard Nixon, John Lennon and Martin Luther King. Born with an I.Q. in the mid-70s and a spine with more curves than a country road, the Savannah-born Gump accidentally discovers a fleetness of foot that ultimately catapults him to stardom as an All-American football player, war hero and businessman.

Guiding Gump through time and introducing him to a host of luminaries were just two of the magic tricks required of 37-year-old director of photography Don Burgess, whose previous experience consisted of modest features and second-unit work on adventure films like Zemeckis' two *Back to the Future* sequels, *Batman Returns* and *Backdraft*. "This picture was literally a puzzle that needed to be put together piece by piece before we ever started shooting," Burgess says of his first major feature. "The character weaves through history and relates to a lot of real-life characters, so the sequences were actually written and designed around existing footage. We often had to work backwards: sequences had to be figured out

Forrest Gump
Gallops Through Time

With the help of CGI effects, cinematographer Don Burgess sends film's protagonist on tour of America's socio-political landscape.

by Paula Parisi



Photos by Phillip Caruso, courtesy of Paramount Pictures

shot by shot before we ever got started."

The puzzle pieces included 35mm anamorphic color footage, historical footage, new 16mm material shot to look "aged," and images designed to look like television broadcasts. The "television" footage is often used as a transitional device as the film jumps out of one context and into another. In one such scene, the point of view changes from Forrest's mother watching him on a black & white television at home to "live" color location footage of the same event, and then to Forrest's football coaches watching on the nightly news.

Budgeted at more than $40 million, *Gump* was shot in 11 states over 80 days and includes scenes with thousands of extras. A typical shooting schedule during location work in Washington, D.C. saw Burgess capturing a candlelight vigil outside the White House and then lighting the entire Watergate Hotel later that same night. "Bob wanted you to really see the shape of the Watergate Hotel because it's so unique," says Burgess. He maintains that rigging the two big Musco lights required for that chore was much easier than shooting the White House. "You can't actually light the White House," he explains. "It's against the law to aim any bright lights at it, so we had to shape light down the street for the actual White House itself and work backwards off the existing light, balancing out the foreground exposure in relationship to the background."

An anti-war protest scene involved a crowd of 200,000, all but 1,000 of them digital replicants. "The challenging part about working with Bob is that he likes to play a lot of things in one shot. The shot must move extensively and cover everything, but still work as a whole, from the closest things in the frame back to 200,000 people away," says Burgess.

A graduate of the film program at Los Angeles Art Center College of Design, Burgess (who is now working on *Richie Rich*) had previously served as director of photography on relatively low-budget films, including *Mo' Money* and *Josh and Sam*. But he had also collaborated with Zemeckis on a *Tales from the Crypt* episode, and the director was impressed enough to give him a shot at the big time. Says Zemeckis, "I had a good instinct about him, which is what you always have to go on. [Don] came to the project with a real sense of what he wanted it to look like."

Burgess says he envisioned a distinctive look for each of the film's time periods. "Each

Opposite: ***Armed with his trusty suitcase and a "box of chocolates," Forrest (Tom Hanks) ponders his personal history.*** **This page:** ***Director of photography Don Burgess on location.***

Directed by Robert Zemeckis
Produced by Wendy Finerman, Steve Tisch, and Steve Starkey
Director of photography, Don Burgess

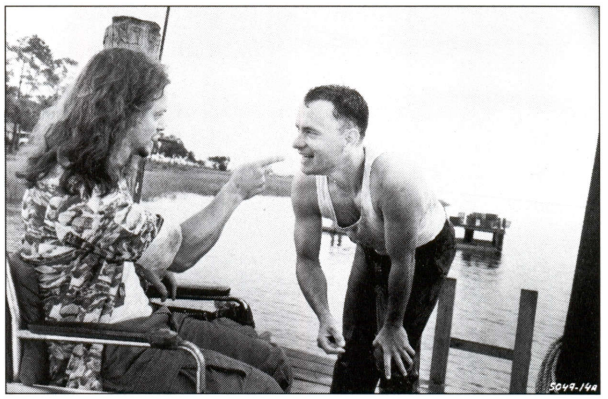
Top: ***Forrest consoles Jenny (Robin Wright) as she exorcises some personal demons.*** **Below:** ***Lieutenant Dan (Gary Sinise) lectures Forrest as they prepare to launch their shrimping business.***

decade had a certain film stock and a certain diffusion combination that I thought lent to the quality. We went for a little softer imagery in the Fifties — a warmer, Norman Rockwell kind of look. For the Sixties we got into a harder quality because of Vietnam — we added more texture, in a sense. The Eighties section was kind of clean, sharper, with less diffusion.

"Everything had to be designed, lighting-wise and in every other way, from the different points of view you're watching the movie from: 'Am I in the color version of the movie in the Fifties? Or have I jumped to the park bench in the Eighties where Forrest's telling the story in flashback?' Because the film jumps around so much, we made a conscious effort to have the visual imagery telegraph exactly what zone you're in."

For the Fifties sequences, Burgess employed Kodak 5297 with a ProMist filter; for the Sixties, he used the 97 again, but also relied upon 5248 for exteriors (he employed a Soft FX filter for this era, but used no diffusion in the Vietnam scenes). Seventies sequences were shot on 5248 with UltraCon filters; the Eighties were also rendered on 48, but without any diffusion. The film's night scenes were shot on 5296.

"The idea was that the film, as a piece of cinema, should have what I call familiar



American icon imagery," notes Zemeckis. "We have historical film [from that period] that we all recognize, we have music that we all recognize. The look of the film should also evoke a certain emotion that's familiar to us."

To give Forrest's life the proper sweep throughout these historical events, the team chose to use the anamorphic format and Panavision equipment. "We felt that the film was about Forrest in relationship to the rest of the world, and compositionally the widescreen anamorphic format gave us the ability to express that," explains Burgess.

During tests from the film's two-month prep period, Burgess had taken "a page of notes for every scene in the movie," referencing every lens and piece of equipment to be used with each shot.

Burgess plotted down to the last detail, even using a GPS (Global Positioning Satellite) navigational unit, also known as a "Trimble," for location plotting. A handheld device used by sailors and pilots, the GPS tracks satellite and sun movement to reveal exactly where the sun will be at any time, any day of the year. "The GPS unit helped us lay out locations for the best time of the day to shoot, and to plan out a lot of sunrise and sunset sequences, and to avoid problems with shadows."

Despite the careful planning, there was still plenty of opportunity to "invent things along the way" on this complex assignment. To capture the numerous shots of the fleet-footed Forrest running, for example, Burgess and key grip Patrick Daily created their own high-speed dolly track by combining "a TV vehicle and some drain pipe." The 300-foot track was used to great effect for football sequences, and during a war sequence in which South Carolina doubled as Vietnam. The jungle scene is one of several extremely long shots where Gump is running — in this case from an enemy attack, and then back again to rescue his fallen comrades. While most such scenes worked fine with nothing more than the dolly and some silks flown overhead via a pulley system to diffuse the sun, this particular scene required special rigs to absorb the weight of the men Hanks carries on his back.

The sequence begins with a continuous shot in which Forrest and his comrades walk through a jungle in the rain and come into a clearing as the rain stops. A split-second later, a land mine explodes, killing the soldier next to Forrest. Here the camera swings around, comes off the dolly track and moves onto the ground to cover the soldiers hit-

JANUSZ KAMINSKI ON FILM

"What's the most important thing about my job? I believe the audience sees the movie through my eyes. I'm hesitant to say that because it sounds contrived. but it's the truth. A lot of people ask me about 'Schindler's List,' and I say there isn't a formula for success. You have to master the craft, but skillful lighting and tricky composition can't put the magic in an actor's eyes. That comes from the story and performances. I'll always thank Steven Spielberg for encouraging me to trust my instincts, and for allowing me to take chances. I wasn't trying to shoot beautiful pictures. I was helping to tell a story. You have to be lucky. I could shoot another 50 to 60 films, and I'll be happy if one of them is as satisfying as 'Schindler's List.' That's my dream."

Janusz Kaminski

Janusz Kaminski won an Oscar® for "Schindler's List." His credits include "Grim Prairie Tales," "The Adventures of Huckleberry Finn," "Wildflower," "The Class of '61," and "Tall Tales." His current film is "Little Giants."

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ting the deck as bombs explode and tracers go off overhead. "The whole Vietnam sequence is, I think, pretty amazing," says Burgess.

Among those Gump rescues is his commanding officer, played by Gary Sinise, who loses his legs in the battle. In another movie first, Sinise was digitally amputated by ILM. But Burgess says that creating the illusion of a legless actor went leagues beyond simply erasing bodyparts on a computer. "If you just take the legs off, it's not going to work. You have to approach the shots differently, designing sets that work. For instance, the character might suddenly swing around; if he had legs, they would have hit the wall or hit the couch, so it all gets designed around creating the illusion. People are going to look at these shots and wonder, 'How did you do that? This guy definitely doesn't have any legs!'"

Gump's war heroics lead to a Presidential Medal of Honor, which he receives from Lyndon Johnson in the Oval Office, another scene realized through digital magic. The longest of the film's historical "collages," the scene goes on for about a minute and includes shenanigans such as Gump mooning the president. "We shot some new footage and manipulated history," says Burgess, who carefully researched news films of the period and shot Hanks in a way that would allow the contrast and grain of the new material to blend seamlessly with the old. The historical figures in Gump actually read lines of dialogue from the script, a feat facilitated by ILM's effects wizards, who "repixillated" their mouths.

Zemeckis thinks the digital breakthroughs are "a big deal, because just like you can't believe everything you read in newspapers, now you can't ever believe anything you see on TV." Or in films, for that matter. But the director doesn't take an alarmist view of this new technology, which he admits has propagandistic potential, saying that it isn't all that different from liberties filmmakers have taken with the medium since its inception. Citing the 1920s experiments of Soviet filmmaker Lev Kuleshov, Zemeckis points out, "He would take footage of a woman crying and intercut it with a baby in a crib, so you would experience the emotions of tears of joy, and then he'd take the same exact footage and cut it with a dead body, so it would give the impression of tears of sorrow. Now it's not done through montage, it's all done in the computer in one frame." Frank Capra too, in his *Why We Fight* series, was able to re-cut Nazi propaganda footage to instill an anti-Nazi sentiment. "You can't just look at something and take it at face value," says Zemeckis. "You have to be aware."

Burgess found himself using all of his experience — including ten years of documentary work — in creating this legerdemain-filled film. "Everything I've done up until this point is in the film, which tapped into so many different types of filmmaking. For instance, for a montage in which Gump is running, Bob wanted it to look like a car commercial, and I'd done years of car commercials. My documentary experience was utilized in the sequences where we tried to match actual documentary footage. As for using Musco units to light huge nighttime exteriors, the big second units that I'd done on the *Batman* and *Back to the Future* films were just huge sets that needed to be lit; those films also had lots of visual effects."

Visually, Zemeckis says *Gump* was "the first movie on which I got a chance to really, really concentrate on creating images. All of my prior films had a lot of special effects and were very plot-driven, and I always had to be making sure that the story was clipping along at a breakneck pace. On *Gump*, we utilized very unconventional methods to tell the story. The plot was full of emotion, and it was a lot of fun to be able to construct images to evoke those feelings."

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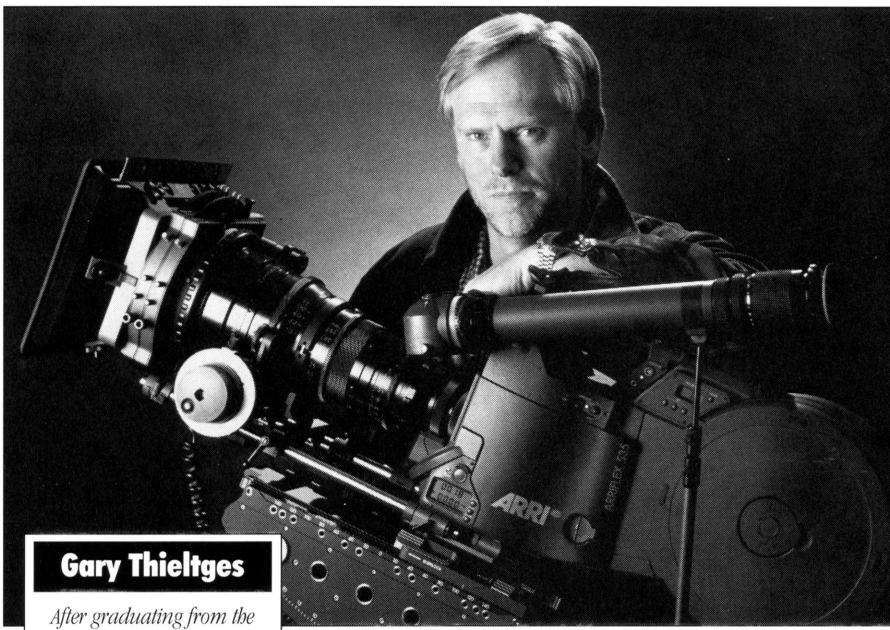

Gary Thieltges

After graduating from the AFI cinematography program in 1978, Gary was awarded the Alfred Hitchcock Fellowship in Cinematography in 1979. He began working with John Alcott in 1980 as a focus puller, going on to photograph seven features including Eating Raoul. *Since 1986, Thieltges has photographed more than 1000 commercials.*

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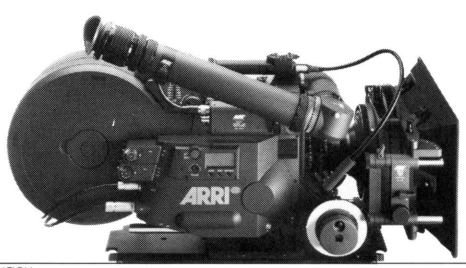

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ILM Breaks New Digital Ground for *Gump*

Effects technology is applied to real-world situations like never before, resulting in revolutionary images.

by Ron Magid

Had you visited the set of any Robert Zemeckis film during the past 10 years, you would have seen the usual activities associated with any production: the cinematographer lining up the next shot, grips moving lights — and a tall, bearded man tearing his hair out in a corner behind a VistaVision camera. That would be effects virtuoso Ken Ralston, whose initial association with Zemeckis on *Back to the Future* is still going strong some half a dozen films later. It's an unprecedented collaboration between effects artist and director, but Zemeckis will stop at nothing to get the shot he wants, even if it means having Industrial Light & Magic manufacture it pixel by pixel. Ralston has never failed him, and the duo's attention to detail on Zemeckis' *Who Framed Roger Rabbit?* and *Death Becomes Her* garnered Ralston two of his four Academy Awards.

Despite the torments inflicted by Zemeckis' filmmaking approach, Ralston delights in providing Zemeckis with a filmic language based on visual effects. This approach has freed the director's imagination and serves as the basis of his unique style — a style that has reached full fruition on *Forrest Gump*.

"Bob definitely pushes us to the absolute limits of our capacity, and this show was no exception," laughs Ralston, the film's visual effects supervisor, amidst the clutter of his ILM office. "I tell the same story about every one of his movies: when I first got the script, I thought we had maybe 25 shots, and figured I'd better get another show because I didn't want to sit around with nothing to do. *Forrest Gump* was written to feel intimate, but if I'd really examined it, I might've realized it could be colossal. Suddenly, it went right through the roof to become the epic it was always trying to be, and we went from 20 shots to about 120! And not one of them was easy — again! Even the ones I thought would be simple were tough; on shooting day, Bob would inevitably come up with a great way of presenting the material that was very difficult to actually pull off. But I find that a great way to work. I like being asked to do something at the last second that hasn't been discussed; we've got to think fast about every parameter so six months later we can still put the shot together!"

The fable-like story of Forrest Gump's journey through modern American history represents a dramatic departure for Zemeckis, in terms of emotional power, as well as a new direction for Ralston and, by extension, ILM, the effects company he helped build. While not as flashy as *Jurassic Park*, *Forrest Gump* used the tools that vitalized Spielberg's prehistoric behemoths to augment reality in ways heretofore undreamed of, and the result is another landmark effects film of the digital age.

Special visual effects traditionally require a serious amount of preproduction planning, but with Zemeckis, Ralston

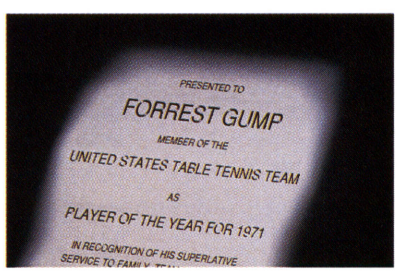
could only plan so much. "We did storyboards as a joke at the start," he grins, "then re-did them after we finished shooting."

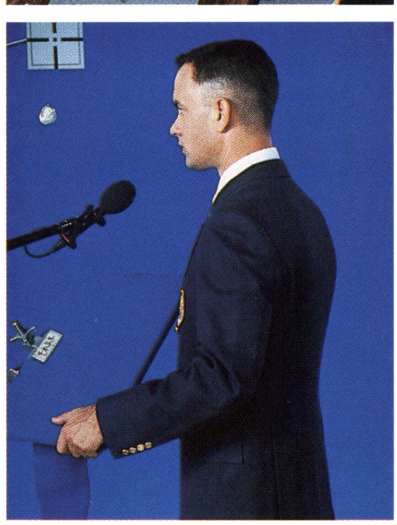
Because Zemeckis kept insisting that *Forrest Gump* was going to be a quick, "guerrilla filmmaking" experience, Ralston failed to foresee the effects deluge. "Of course, there were limitations to what Bob asked us to do and believe me, we felt them all! The toughest thing, and I said this on *Death Becomes Her*, is trying to recreate reality. The more surreal an image is, the more leeway we have to fake our way through because people can't identify with it. This show was firmly based in reality."

The Beginning and the End

Naturally, Zemeckis toyed with reality from *Forrest Gump*'s very first shot, the metaphorical image of a feather tossed about by the wind. At almost three minutes, the shot is the longest digital composite in film history, shattering ILM's previous record for *The Flintstones'* opening sequence. Helmed by computer graphics supervisor Stephen Rosenbaum, the shot begins as the feather magically descends from the heavens into a Georgian town square, nearly lands on a man's shoulder, wafts over a car, is suddenly tossed up into the sky, and sails through the trees, eventually landing at Gump's feet. Gump leans over from his park bench and picks the feather up, placing it between the pages of his ever-present copy of the classic children's book *Curious George*.

"It's a nice opening and it's classic Bob Zemeckis," Rosenbaum beams. "We had to figure out how to animate this 'character' as it floated and reacted to its environment. We did a series of tests, dropping the feather from a rooftop as Ken Ralston shot reference footage with his video camera. Sometimes a gust of wind blew the feather in the opposite direction, and other times it fell like a rock! We finally came up with the idea of suspending a real feather from a monofilament line over a little fan pointing straight up against bluescreen, then animating it by pulling the monofilament to get some interesting motions."





The graceful, twirling, swirling animation was handled by former ace motion-control cameraman Peter Daulton, who is an example of how ILM has retrained their best people in the new digital realm. "Peter made the jump to CG and became a star animator," Rosenbaum says. "His background was perfect for the feather shots because he knew how to choreograph moves. We had about 30 different takes of the feather being puppeted at different frame rates — one take where it was just floating, another where it was twisting around, and so on — and Peter choreographed this 4000-frame sequence, combining all of the takes into one seamless animation. Technical director Linda Siegel did a lot of subtle work, like tracking the feather's reflection in a car windshield, to blend the feather seamlessly into the environment."

At the film's end, while Forrest waits for a school bus to bring his son home, he opens his volume of *Curious George*, but doesn't see the feather fall out of the book and land at his feet. The camera pulls back as the feather once again flies up into the sky, signaling the end of the film.

The Environment

No film in history has used so many effects to mimic what we think of as reality. Intent on wringing the most emotion from every sequence, Zemeckis ordered his troops to turn calm seas turbulent, make clear skies cloudy, and fill empty space with moving spectators. "This project is four times the size of *Jurassic Park* in terms of complexity and the size of the crew," says Rosenbaum, who, along with computer graphics supervisor George Murphy and computer graphics sequence supervisor

Opposite page: ***Matching footage of Hanks with archival material required painstaking attention to detail. Variables to be considered included color balance in skin tones and in the suits, focal lengths, camera distances, noise patterns, and grain size and softness.*** **This page, top to bottom:** ***Archival footage of President Nixon awarding a plaque; bookcase digitally added to mask out recipient and a portion of the plaque; closeup of the actual plaque; new copy to be inserted over plaque; Nixon holding the "Gump" plaque; Hanks as Forrest Gump accepting his "plaque" before the blue screen.***

John Schlag, implemented Zemeckis' and Ralston's vision of *Forrest Gump*. "People won't realize that most of the effects in the film were designed to enhance reality. I find that more enjoyable than working on a fantasy film."

Those effects elevated a sweetly sorrowful scene where young Forrest and his best girlfriend, Jenny, hide from her abusive father in a cornfield. As they pray to become birds and fly away, a whole flock of doves suddenly takes wing from out of the corn. "That's one of my favorite shots," Rosenbaum enthuses. "They tried to use real birds on location, but every time they let them go, the birds flew off in the wrong direction! So James Straus, who animated on *Jurassic Park* and *The Mask*, modeled and animated three dozen birds in the computer."

The film's Vietnam sequence offers one of the film's most memorable images: Forrest carrying his army buddy, Bubba, to safety. This shot involved a clever transition from stuntman to actor. Realizing that audiences would be anticipating a stuntman, Zemeckis had Hanks run right at the camera to prove that the shot was authentic — only it wasn't. The lengthy shot featured a stuntman carrying the actor playing Bubba, but when he came close to camera, the stuntman stumbled, allowing ILM to insert a morph transition between the stunt double and Hanks so that Hanks would appear to carry Bubba the entire way.

This trick was just one element of the spectacular shot, however. As Forrest emerges from the jungle, three Phantom F-4 jets scream by overhead, firing sparrow missiles and dropping napalm canisters, which explode into a wall of flame just behind the running Gump. The completed shot consists of elements shot on location in South Carolina, including plates of both the stuntman and Hanks carrying Bubba out of the "jungle," as well as a background plate with huge, carefully timed explosions heading right toward camera. "Back at ILM," Rosenbaum says, "we painted frame-by-frame mattes to extract Forrest and Bubba from the original plate and insert them into the plate with the explosions. Then we modeled the F-4s, sparrow missiles and napalm canisters in the computer, built the environment they were flying through, timed out the explosions so the napalm canisters hit their targets before they exploded, and used Softimage to animate the planes. Once the planes were rendered out, we pasted them into the background, pulled some small mattes so they looked like they were flying behind the trees, and *voila*! No one'll think that's CG."

Audiences also probably won't spot the dozen or so CG helicopters buzzing through the skies, or notice Yusei Uesugi's CG matte shots, which transformed a pine-covered area of South Carolina into a Vietnamese landscape replete with rocky mountains and swaying palm trees. Nor will they suspect that the phosphorous tracer fire that nearly wipes out Forrest's platoon is another CG effect.

After returning from battle, Forrest's aptitude for ping-pong makes him the top seed on the American team vying for the world championship in China. The vast arena, painted Communist red and crammed with 100,000 spectators, was a virtual ILM invention, right down to the CG ping-pong ball. The sequence was spearheaded by visual effects art director Doug Chiang and computer graphics sequence supervisor John Schlag. Taking his cue from production designer Rick Carter's spare set — which included the gaming table, a huge painting of Chairman Mao, the flags behind the Chinese champion, the people in front of the stalls and nothing else — Chiang's design filled in the arena's considerable blanks. Considering the amount of effects work required, some directors might have shot the brief sequence from one or two angles, but Zemeckis cheerfully covered every angle in half a dozen shots, including a bird's-eye aerial perspective. "They weren't able to get up high enough for that shot," Chiang smiles, "so it was my responsibility to extend the shot and design the overhead view of the stadium. I wanted to make it look grand, but not so fantastic that it would take you out of the movie."

The rapid-fire match between Forrest and the Chinese champion was shot without a ping-pong ball because no human being could maintain the breakneck pace Zemeckis wanted. "Instead, we animated the ping-pong ball!" grins Stephen Rosenbaum, who worked on the ping-pong animation with CG supervisor George Murphy and sequence supervisor John Schlag. "We had a metronome with a high pitch and a low pitch going back and forth on-set. Tom Hanks was supposed to swing on the low pitch and his opponent, Valentine, swung on the high pitch, but they often got off sync because they were really supposed to be going at it! Then one of our star animators, Brian Van't Hul, scanned a photograph of a ping-pong ball into the computer and animated it so it had a sense of weight, a sense of being affected by gravity, and some topspin. He also adjusted the character of the motion blur so that when the ball bounced on the table, there was actually a V-shaped blur."

At the ping-pong match and in various football stadiums, Zemeckis asked ILM to create moving crowds of thousands to fill the arenas to capacity. But those crowd enhancements paled before the 200,000 people Forrest faces at a peace rally in front of the Washington Monument. "We had eight shots to do there that were all mind-numbingly complicated," Ralston sighs. "We had a very small crowd of 1,000

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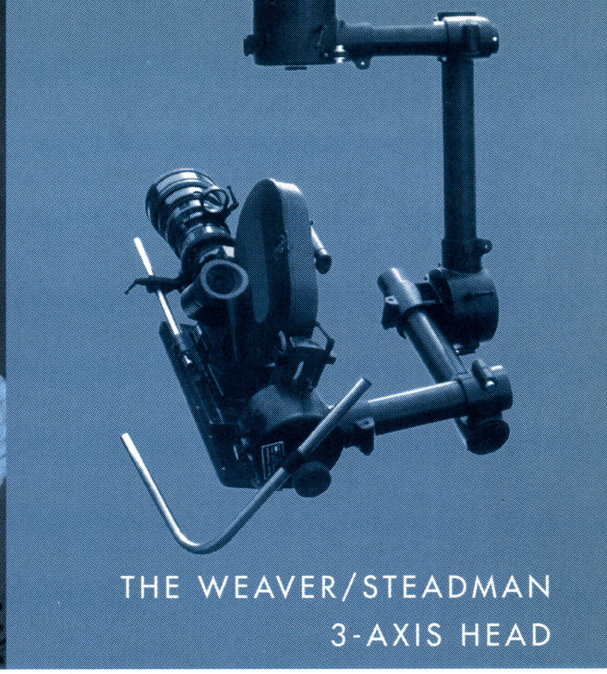

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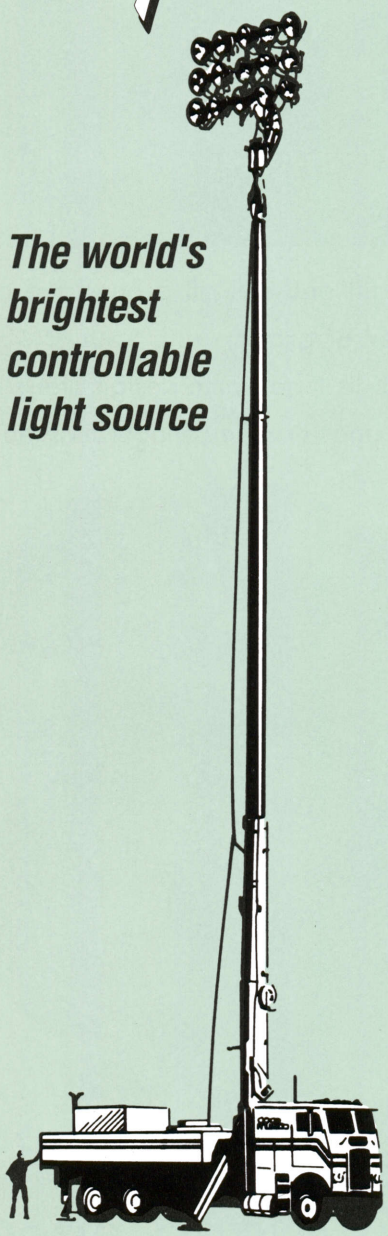
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people, all dressed appropriately and waving signs. Every color was in those shots, and there were tons of minute details. It's amazing how quickly that space ate up 1,000 people."

ILM also whipped up a storm for a shot of Forrest at the rail of his shrimp boat on the high seas. In reality, the skies were clear and the boat hadn't even left the dock! The wind and rain were created practically by running water in front of a jet engine, but the ocean in the background was extremely still. Zemeckis asked ILM to rough up the water around the boat and add more wind and rain closer to camera. "We shot sequences of huge wave splashes in a water tank between the buildings here at ILM," says computer graphics supervisor George Murphy. "We then placed the huge waves in the shot so they crashed against the side of the boat, and did some match-moving to rock the boat with the motion of the water. Sandy Houston and her crew also made a number of articulated mattes to extract the rigging and add more rain to the shot."

Lieutenant Dan

Forrest's commanding officer in the war, and his shrimping partner in his post-war career, is the embittered Lt. Dan Taylor. The character loses his lower legs during the Vietnam War, but the limbs of the actor playing Lt. Dan, Gary Sinise, are all present and accounted for. Knowing that the first shot of the legless lieutenant — which takes place in a Saigon army hospital — would be crucial to the audience's acceptance of the illusion, Zemeckis pushed Ralston to pull out all the stops when establishing the gag. The director's longtime collaborator aced the test, devising countless little subtleties to sell the sequence.

As uncompromising as ever, Zemeckis refused to use traditional leg-binding techniques to create the illusion of legless-ness, instead directing Ken Ralston and his ILM team to devise effects that would establish Lt. Dan's affliction beyond a doubt. "Gary looked like he had no legs because we eliminated them," says Ralson. "We had Gary wear bluescreen stockings over his feet and lower legs that tucked into the ends of his pants. We did blank plate passes of each location to add back the information Gary's lower legs blocked. After we removed his lower legs, we did some 3-D work and added shadows to make the ends of his legs blend organically into the scene."

Zemeckis and Ralston set up the shot of Dan on the hospital bed so it looked as if Sinise's lower legs were simply concealed in holes in the bed. "That's exactly what we wanted it to look like," Ralston says triumphantly, "until an orderly lifts Lt. Dan out of the bed and onto a gurney right in front of camera and we see he has no lower legs. We removed the lower section of the bed so Gary's legs dangled off the edge. The orderly actually appeared to swing Lt. Dan through this physical space that the actor shouldn't be able to go through. We also added some morphing so it looked as if he was dragging the sheets as he was lifted off."

Because Sinise's legs were just hanging over the edge of the bed when the scene was shot, CG animation supervisors Rosenbaum and George Murphy and their crews and had to fill in the space behind Sinise's lower legs, which was harder than it sounds: "Although we shot empty plates, we couldn't get the orderly to repeat his movements exactly, so there was a lot of tricky matte work, compositing, paint work and subtle shading to make it look real," says Rosenbaum.

Into the Archives

No aspect of ILM's work on *Gump* — not even creating an amputee from a whole actor — will foment as much controversy

as the state-of-the-art blending of Tom Hanks with historical figures and events. Using newsreel and cinematic images culled from any number of archives, Ralston and his crew tackled some of the most sophisticated composites ever attempted.

The film's first opportunity to marry Hanks with archival material will probably go unnoticed except by film school students. In a 30-second shot, the camera pulls back from a daguerreotype of Hanks in Civil War-era makeup, as Forrest tells how his grandfather started "some sort of club." The photograph's frame melts away to reveal a background of trees as Forrest's grandfather comes to life, pulling a Ku Klux Klan hood over his head. The camera keeps tracking back to reveal that he's riding a horse, then cranes up as he joins a huge group of Klansmen on horseback. So what's so remarkable about this shot? With the exception of Hanks, his horse and a small section of road, all of the elements were culled from D.W. Griffith's *Birth of a Nation*.

"After we found the perfect shot from *Birth of a Nation*, which was locked-off, of course," Ralston says, "we had to guess the camera position based on how the shot looked, since we had no information available. We eventually estimated that the camera was about 12 feet in the air. We then dressed a location to look a bit like the road in the *Birth of a Nation* plate, and shot Tom on horseback at about waist-level. Then the camera boomed up on the crane, but we had to be careful not to reveal the area where the Klansmen from *Birth of a Nation* would be as Tom, who didn't ride very often, appeared to trot his horse forward as if correcting him — which, luckily, he was! As he galloped back towards where the Klansmen would be, I tried desperately to get my camera more or less locked off in the end position, which didn't quite work. Back at ILM, we skewed

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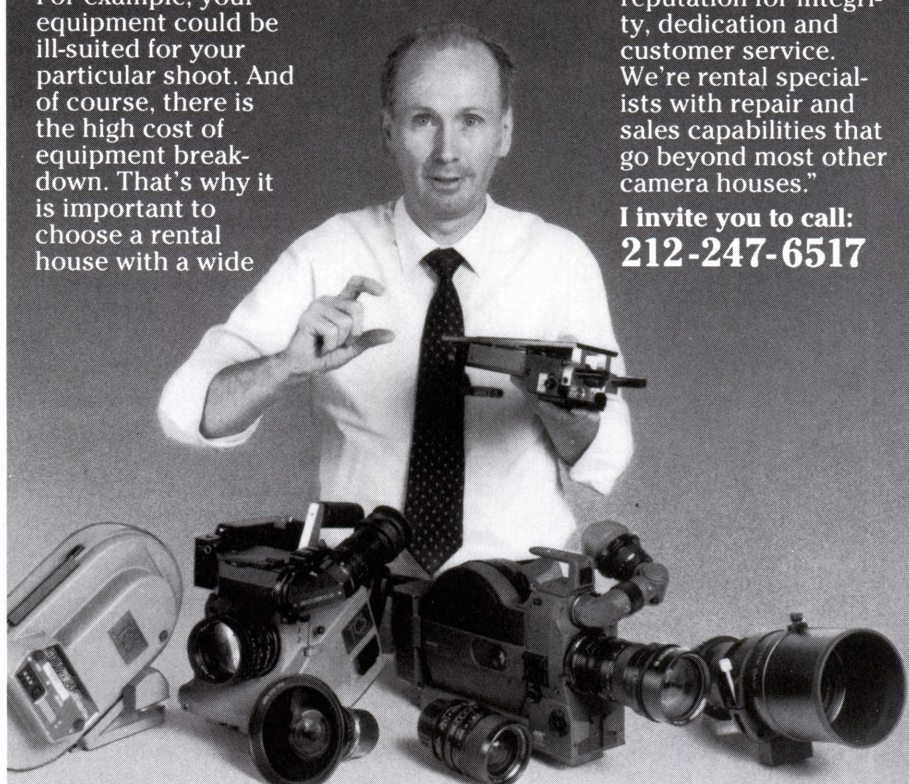

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and distorted part of the original *Birth of a Nation* plate around in a phony 3-D/2-D gag so it blended into our background plate for that last bit of the move. At the beginning of the shot, we punched all the way into Tom's face on the computer, then freeze-framed that and added textural information to make it look like a daguerreotype. As the camera pulled back to full frame on the *Birth of a Nation* plate, revealing these guys on horseback, Bart Giovannetti match-moved Tom into the shot, timing the plate so that the Klansmen appear to follow him. As they rode toward us, we did a moving split that wiped off our road and setpiece, so it was all *Birth of a Nation* footage after that."

Puppeteering the Presidents

ILM's wild blending of Hanks with historical figures will undoubtedly be compared to footage in Woody Allen's *Zelig*, a favorite film of Ralston's. Ralston concluded that Zelig's meetings with remarkable men was achieved largely via recreated footage; *Gump*'s visual effects supervisor was forced to pursue entirely different techniques.

While shots that blend Hanks into actual footage of then-Governor George Wallace blocking the University of Alabama's entrance may remind audiences of *Zelig*, such comparisons will vanish in the wake of Forrest's encounters with former Presidents Kennedy, Johnson and Nixon; for these shots, ILM went so far as to use computer graphics to put words in the statesmen's mouths. As Ralston will attest, nothing about these shots was easy. Incorporating the full gamut of black & white, color, TV and video documentary footage, the ILM archival team, headed by CG supervisor George Murphy, was inevitably attempting to interpolate effects with the most primitive, unforgiving media.

"When this stuff was shot, news was the intent," Murphy observes, "so the lighting is what it happens to be and the footage is all over the place. Because the film is so old, we did match-moves on each frame to compensate for emulsion sag, which caused distortions in the image and made it even harder to track our actors into the frame. Bart Giovanetti, John Alexander and Greg Maloney spent several weeks early on eliminating original camera moves and stabilizing the archival footage."

Naturally, director Zemeckis insisted on challenging ILM at every turn, so he asked ILM to fashion a sequence wherein Forrest and his football team meet President Kennedy, using three clips of Kennedy from three separate archival sources.

The first clip was a quick shot of JFK holding a football outside the Oval Office as the camera tilted up to reveal Forrest and the University of Alabama football team. In the original footage, however, JFK was standing outside on the White House lawn on an overcast day (at least the lighting was even), with a wild tilt-up camera move. "There was a lot of motion blur in the original shot," Murphy notes, "which made it difficult to pull JFK out of the archival footage and put him against our new football players inside the Oval Office. After we put all the elements together, we realized that Tom got lost in the background, so Bob asked us to add a secondary camera push-in to direct the viewers' eyes over to Tom. That move was handled by one of our technical directors, Steve Molin, and Bart Giovannetti. There was only one problem: the JFK clip wasn't long enough, so we had to do some tricky rock-and-rolls to extend the footage. We found some places where we could add a bit of cycling, which we were able to disguise with the secondary camera move."

The next cut of Kennedy was originally filmed in the White House, while the President

was shaking hands with a line of visitors. ILM's first task was to remove him from that environment, which was complicated by the archival footage's wildly erratic camera movement. "Bart stabilized JFK," Murphy says, "and then rotoscope artist Lisa Drostova hand-drew mattes on the computer to extract him from the shot. The problem was that we had to eliminate the people shaking hands with JFK in the original shot, including a heavyset woman in a white dress, whom we decided to replace with skinny Tom Hanks. We chose her because JFK was positioned properly for our purposes only in that section of the archival shot. That meant Bart had to do a splitline on JFK before and after the woman crossed in front of him in order to eliminate her from the shot; then we did a little sleight-of-hand to reveal a section of JFK that wasn't in that frame, and eventually hid the splitline under Tom Hanks, whom we timed to cross the blend at the same moment. We also balanced JFK's image to optimize the look of the archival footage, which was awful, by pulling it out of the bottom of the negative. Lastly, we matted JFK and Tom into the Oval Office set created for *Dave*."

While ILM applied its remarkable effects talents to bring Tom Hanks and JFK together in the same space at the same time, the resulting images boil down to two people shaking hands in a room; if those pictures didn't look both real and unremarkable, ILM would have failed. For the face-to-face meeting and handshake, Hanks and another actor were shot against bluescreen shaking hands with empty air on a Paramount stage. "We used a videotap to rough-comp them over the archival footage so we could see if eyelines and hands were lining up," Murphy says. "There was nothing for Tom to look at, so when he hit certain marks we'd say, 'Shake, shake, shake' and he'd mime shaking hands and try

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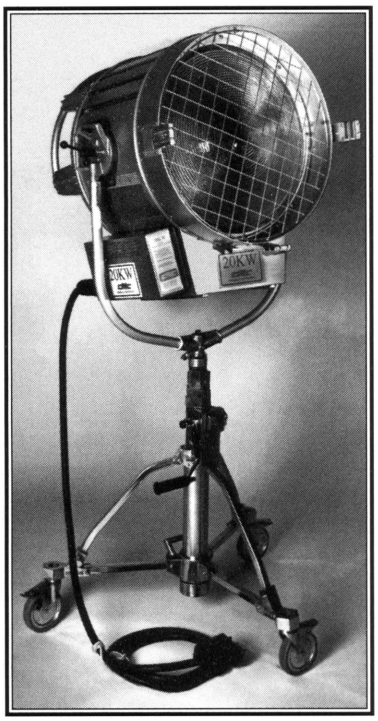

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to match eyelines. The timing of the handshake was almost impossible to get right without doing a hundred takes, so Bart used some morphing techniques and Kerry Nordquist, one of our painters, finessed some of the touch-up so that the hands overlapped just right."

But that complicated stuff was child's play compared to what came next. "After Tom shook the President's hand, Bob wanted Kennedy to say all of these lines he'd never said in his life!" Ralston winces. "At the time, I didn't know how we were going to do this dialogue. I tried to get them to explore JFK's real speeches, but we ended up with an actor on-set who didn't look much like Kennedy but recreated his voice and did the dialogue Bob wanted. After we came back to ILM, I realized that personalities like JFK are so ingrained in us that the slightest change in the nuances of their mouth would blow the illusion; if we used any of the stand-ins' mouths, it would not only look like somebody else, the effect would look like Clutch Cargo! I decided we'd somehow have to change the position of JFK's actual mouth in the computer by manipulating his image so it was really him. We studied our actor doing the lines, then broke that footage down on the same old animation sheets we use for everything — but then it got all different. We scanned Kennedy into the computer and visual effects art director Doug Chiang animated his mouth in 2-D over the archival footage. His palette was the computer, and the process was painstaking."

At Chiang's workstation was a photographic chart of a man's mouth making every phonetic sound in the alphabet, a chart which he'd modified from exaggerated drawings in a cel animation book. There was also a mirror nearby so he could study his own mouth movements: "The photographs told me the basic mouth positions for certain sounds, but in fluid motion, those positions blur together. The mirror was really helpful in that I could look into it, speak the line and see how each position blended into the next."

The most difficult aspect of animating JFK's mouth was that he smiled and talked in the original plate, but not in sync with the dialogue Zemeckis wanted him to say. "I fixed that by morphing his mouth into a neutral position, which proved to be more difficult than anything else," Chiang remarks. "When a person talks, highlight changes occur on their face; when I closed JFK's mouth, his highlights continued moving, which looked really odd, so I had to paint them out. I then re-timed and animated his mouth movements using morph to set certain splines on his 2-D image. I painted the key frames by hand, then used the morph transitions to smooth it all together. The morph program I used was very good: when I dropped JFK's lower jaw, the skin around his jaw and cheek stretched and sagged naturalistically. I also animated other parts of his face, which helped sell the averaging from one mouth position to another. In some cases, when I animated his mouth open, there was nothing inside, so I'd cut and paste and paint his own teeth back in. I tried to use as much of the actual person as possible because it's really important with historical figures that we don't try to cut and paste too much."

Forrest Gump's shots of Tom Hanks interacting with historical figures definitely pushes the outer edge of effects work, dabbling with what were supposed to be photographic documentations of history. When seeing is no longer believing, the concept of photography as proof of anything seems on the verge of extinction. "It's been weird playing with historical figures like this," Ralston muses. "We're saying, 'Here's the technology to do really dangerous work.' It's been done in the past with stills, but

now, in the wrong hands, we have the technology to really do some scary things."

Conclusion

ILM's involvement with *Forrest Gump* transcends any sinister implications about government mind control, of course. The collaboration proves that visual effects have the potential to become totally invisible — and the more invisible effects are, the more stories you can tell with them. Most of all, the film is a celebration of a unique partnership between Robert Zemeckis, who pushed the limits of technology and asked for the impossible, and Ken Ralston, who somehow managed to make it possible. While Zemeckis had the vision to bring *Forrest Gump* to the screen, he couldn't have done it half as effectively without Ralston. "And I wouldn't be doing the things I'm doing without him!" Ralston fires back. "This has been Bob's most complicated film, and he always likes complications. This is what Bob's been building up to."

Now that *Forrest Gump* is an unqualified critical and commercial success, it's hard to imagine that it could ever have been anything else; but the fact that the film took nine years to reach the screen isn't lost on Ralston: "This project seemed like a big chance, but it was a script you couldn't put down, and you never know where the film will take you from minute to minute. One day during the last two weeks of the show, Bob and I were sitting on a football field, and he'd spent a lot of money at that point. I don't know how we got on the subject, but he turned to me and said, 'I don't know if this film works or not, or if it'll ever come together. Maybe it'll just be a grand experiment!' That's how he approaches every movie: it could always be a total disaster, but at least it's a challenge and a different thing to do."

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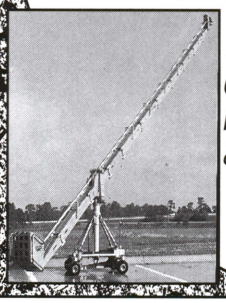

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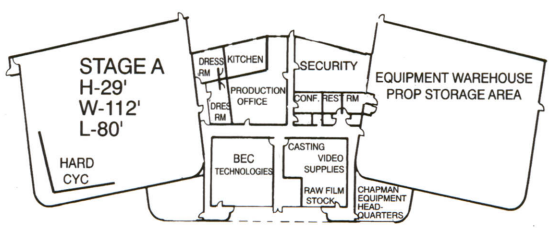

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"Using Moviecams let us go with two cameras instead of three," says DP Robert Primes ASC

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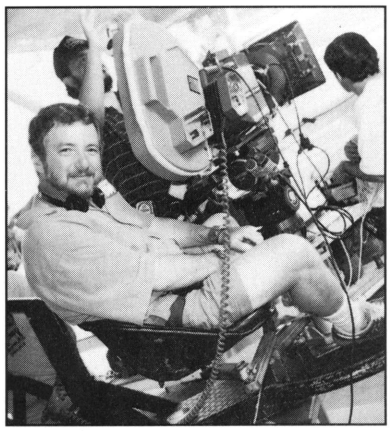


DP Robert Primes and Compact on Tulip Crane, shooting Poor Man's Process footage in Mexico. 1000 foot magazine mounted back of camera.

"These days, you can hardly find a feature film that doesn't have a Panaglide or a Steadicam credit," says Director of Photography Robert Primes. "Body rigs and hand-holding are now an everyday part of the vocabulary."

Available skill

"Instead of hiring the specialist Operator next Thursday for the pre-planned glide shot, I prefer to use the body rig whenever a shot blocks out that way. I try to hire one Operator who can also handle the body rig, so we have that extra skill available every day."

Available gear

"Of course, we also need the *equipment*...With an unlimited budget, unlimited truck space (and an empty street to park the trucks on), you can carry every kind of specialist gear with you every day. But the real World isn't like that."

Budgets down

"The real World is particularly price-conscious right now, in features and TV shows and commercials. Budgets are generally going down; scheduling is tight. In 1993, we shot a two-hour CBS TV movie, in the rainforest of Southeastern Mexico, in twenty-two days."

Time limited

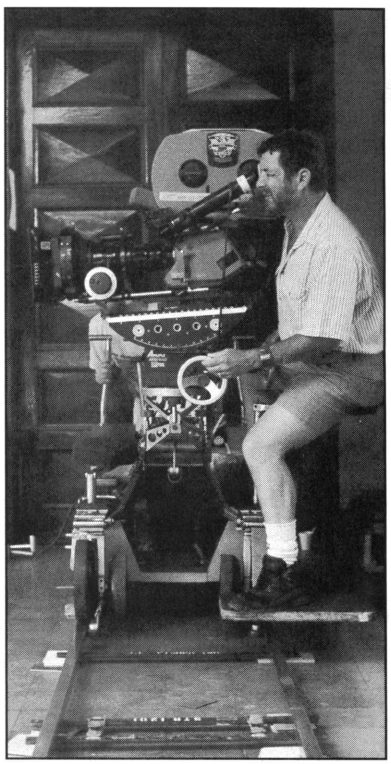
"When the producers interviewed me for the job, they said: The budget is limited, so is time, we'll be in the jungle, hot and humid, the terrain will be awful, we'll need a moving camera and fast setups, what do you suggest?"

Location backup

"Well—shooting on location in a foreign country, some of it inside a sub-tropical rainforest, we'd have to take a backup sound camera, despite the limited budget. Moving camera scenes in the jungle would certainly mean hand-held and glide shots. We'd need a silent-running lightweight camera for those. And we wouldn't know in advance which days we'd need it."

Extra lens sets?

"Even if the lightweight used the same accessories as the A camera and its backup, that

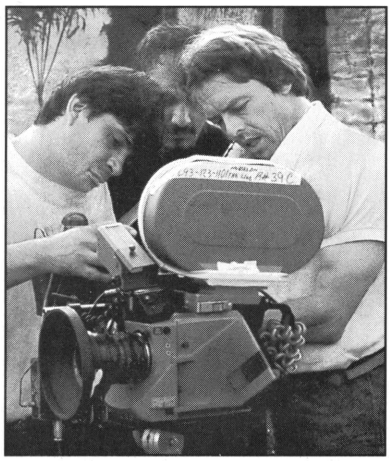


Lining up shot in Mexican hacienda. Crew liked Compact's zoom eyepiece and large exit pupil that made viewing easy, even with eye off center.

would still be three cameras to rent and carry around for the entire shoot. And some lightweights don't have the same lens-mount, or they're not quiet, or they take different magazines, or they can be used *only* for the glide shots."

Do two jobs

"So I told the producers about the new Moviecam Compact. It could be our principal sound camera. And because of its modular design, we could strip it down and use that same camera for our hand-held and glide shots. In any configuration, the Compact would be completely quiet. In glide-rig mode, it would weigh about twenty-five pounds, loaded."



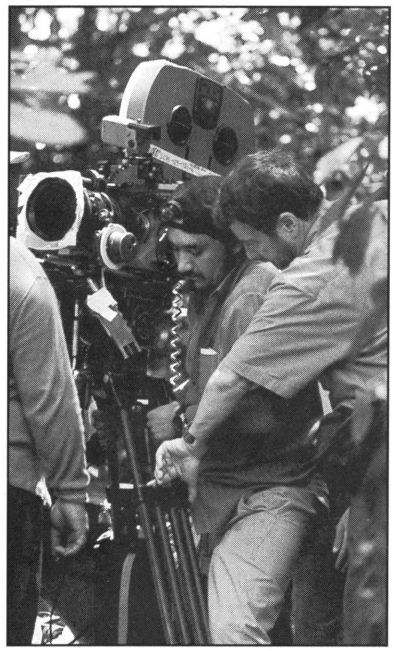
Operator Ross Judd with Compact in its bodyrig mode. 400 foot mag, finder module completely removed.

No third camera

"As a sound camera, the Compact wouldn't be the cheapest to rent. However, with any other camera system, we'd have to rent a third camera for the glide shots, or settle for a backup sound camera that would be barely light enough for a glide rig and not really quiet enough."

Flexible system

"For the backup sound camera, another Compact would be ideal. A Moviecam SuperAmerica body would cost us less to rent, though—and it would use the same magazines and the same lenses as the Compact."



July heat, humidity, rough terrain.

Sweat and spray

"It was July when we arrived in the rainforest. It was so hot and humid, we were all drinking a gallon or more of water every day. One scene we shot at the base of a 150 foot waterfall—so much spray, you could hardly see. The Compact kept on running."

Hard fall

"For another scene, Operator Ross Judd was shooting an actress trotting along a narrow trail. Ross was moving backwards down a fairly steep slope and he tripped over a rock. He practically flew—and the camera took quite a hit. He said the magazine would have broken off if it had been another camera. The film had cored, so we reloaded, checked the collimation and kept on shooting."

Robert Primes credits

Robert Primes' feature and TV credits as DP include Aspen Extreme, The Hard Way, Bird On A Wire, My Antonia, 11 episodes of Quantum Leap and 22 episodes of Thirtysomething. He has also shot numerous commercials and TV movies.

Quietest

"We found the Compact a pleasure to work with. All the modules screwed on and off quickly. Controls were clear and logical. Speed changes, for example—there was no need to look at the instruction manual. The viewfinder was wonderfully bright. Soundman Ken Ross said it was the quietest camera he'd ever met."

Less is more

"Using Moviecams let us go into that rainforest with two cameras instead of three," says Mr. Primes. "A camera package with less weight, fewer cases and lower cost."

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The Modular Compact

Misfits and Malcontents: Showtime's *Rebel Highway*

Ten directors and seven cinematographers reprise ten AIP teen exploitation films of the Fifties for cable television.

by Jean Oppenheimer

Leave it to John Milius to come up with an appropriate war analogy. "It's like being Mao. You're a guerrilla. You don't have the equipment you need; the only thing you have is a small unit, mobility and your goals. And you get to those goals through methods other than mounting a frontal attack."

The director's remarks refer to *Rebel Highway*, a Showtime anthology series consisting of ten 90-minute feature films, each one shot in just 12 days on a budget of approximately $1.3 million. Milius, who began his career 25 years ago writing and directing low-budget actioners, was one of 10 directors and seven cinematographers to accept the cable network's grueling challenge.

The films take their titles and their content (generally teen exploitation) from the vast library of American International Pictures, which in the 1950s turned out such angst-ridden melodramas as *Confessions of a Sorority Girl, Motorcycle Gang* and *Shake, Rattle and Rock.* The new versions aren't simply campy remakes, however. The storylines, shooting and lighting styles, and editing were left to the discretion of the directors, privileges not usually afforded in Hollywood.

> "Everything that's really good is done slightly out of control."
>
> — John Milius

Those freedoms, by and large, were the attraction for the slate of talented directors on the project; the chance to work with Milius, Jonathan Kaplan, Joe Dante and William Friedkin, among others, was the attraction for many of the cinematographers.

The original plan was to keep the same crew throughout the nearly six-month operation, bringing in a new director and cameraperson for each film. Cinematographers were allowed to bring in their own first assistants, but the rest of the camera department, as well as the gaffer, were supplied by the production company. The producers struck a deal with Clairmont that limited the crew to Arriflex camera equipment; a similar deal was negotiated for lighting gear.

The rules of the game changed slightly as the series progressed: starting with the third film, camera operators were added, and the last six films were shot on Agfa film stocks. Several crew members left during the six-month period, and a separate crew was hired for Friedkin's film when the producers realized that they had to shoot two movies at once in order to keep to their time schedule.

In the end, seven cinematographers participated: Anthony Richmond, who shot Milius' *Motorcycle Gang*; Richard Bowen, who shot Dante's *Runaway Daughters*; Jean De Segonzac, who photographed three films (John McNaughton's *Girls in Prison*, Uli Edel's *Confessions of a Sorority Girl*, and Allan Arkush's *Shake, Rattle and Rock*); Roberto Schaefer, who shot Ralph Bakshi's *Cool and the Crazy* as well as Robert Rodriguez's *Roadracers*; Sandi Sissel, ASC, who worked on Mary Lambert's *Dragstrip Girl*; Cary Fisher, cameraman on Friedkin's *Jailbreakers*; and James Chressanthis, who shot Kaplan's *Reform School Girl.*

Time and budgetary constraints taxed everybody's patience and ingenuity; as key grip Michael Pizzuto euphemistically puts it, "You learn to live without

Rebel Highway series
produced by Debra Hill and Lou Arkoff

Motorcycle Gang
Directed by John Milius
Director of photography, Anthony Richmond

Runaway Daughters
Directed by Joe Dante
Director of photography, Richard Bowen

Girls in Prison
Directed by John McNaughton
Director of photography, Jean De Segonzac

Confessions of a Sorority Girl
Directed by Uli Edel
Director of photography, Jean De Segonzac

Shake, Rattle, and Rock
Directed by Allan Arkush
Director of photography, Jean De Segonzac

Cool and the Crazy
Directed by Ralph Bakshi
Director of photography, Roberto Schaefer

Roadracers
Directed by Robert Rodriguez
Director of photography, Roberto Schaefer

Dragstrip Girl
Directed by Mary Lambert
Director of photography, Sandi Sissel, ASC

Jailbreakers
Directed by William Friedkin
Director of photography, Cary Fisher

Reform School Girl
Directed by Jonathan Kaplan
Director of photography, James Chressanthis

Photos by Abe Perlstein and Randy Tepper, courtesy of Showtime

Left to right, in descending tiers: *Joe Dante (with glasses) readies actors Paul Rudd, Holly Fields and Mark L. Taylor on* Runaway Daughters; *Robert Rodriguez (in headband) coaches Mark Lowenthal, David Arquette and William Sadler during filming of* Roadracers; *Mary Lambert (left) and Sandi Sissel eye a setup on* Dragstrip Girl; *John Milius (with walkie-talkie) and Tony Richmond supervise* Motorcycle Girl; *Roberto Schaefer (left) and Ralph Bakshi chum around on the set of* Cool and the Crazy; *Allan Arkush frames a scene while Jean De Segonzac checks the view through a finder on* Shake, Rattle and Roll; *Uli Edel and De Segonzac aim the camera at Jamie Luner while shooting* Confessions of a Sorority Girl.

a lot of things." Not surprisingly, some shoots were more hellish than others. Below, each team discusses how it handled the shortages and restrictions, as well as the style and approach adopted by individual directors and cinematographers.

"You have to have a sense of tactics for this kind of shoot," explains Milius, making another military allusion. "It's always compromised; you're never going to get what you want. I wanted to make *Motorcycle Gang* in the desert. I wanted it to look big and vast — great spaces and little people lost in them. I wanted it to look like a John Ford movie. Of course, I want everything to look like a John Ford movie."

The January 17th earthquake put an end to Milius' hopes of shooting in the desert. With the freeways to Lancaster closed, he had to make do with locations in and around Los Angeles. A couple of days in Indio helped.

"We had huge night exteriors," confirms Richmond, who signed on to the series specifically to work with Milius. "(With only) two 12Ks and two Condors, lighting was difficult."

Because moving equipment was so time-consuming, Richmond and Milius carefully planned their shots to stretch each location into two or three. They also relied on handheld because it was quicker than laying dolly tracks. Two cameras were going much of the time, one operated by Joe Valentine and the second by Richmond.

The most interesting scene for both Milius and Richmond was the killing of a lawyer, which occurs near the beginning of the film. It was getting late, the light was low, and it was raining. "We had literally 45 minutes to shoot the scene," says Richmond. "The producers told John he couldn't do it."

"Their solution to everything was to drop the scene," laughs Milius. "I said, 'Get a car, put some cameras in it and let's go.' The first camera, a shoulder Arri, broke, so we only had a little Arri that didn't have sync sound and which made a lot of noise. I told the actors not to pay any attention to marks and to just do the scene as if they were doing it for real. It was just general stag-

ing. I shot the scene until it fell apart, then I picked it up and shot some more. When the other camera got going I told Tony to just pick off what he could. It's rough — people walk in and out of frame — but you think you're observing a real murder."

Richmond picks up the story from there. "To complete the sequence, we had to get a shot of a patrol car and a Texas Ranger walking across the road to the murder site. It was so dark you couldn't see, so I put two flashlights in my hand and just waved them around to make it look like the spinning light of a police car. With the stock I was using — Kodak 5296 — it came out just amazing."

"Nothing panics him," Milius says of the British-born Richmond, who photographed some of Nicolas Roeg's most compelling works. "I love that. On a film like this you need a guy like Tony who's really good at what he does and is still willing to be reckless."

Motorcycle Gang opens in a bright setting reminiscent of *Twin Peaks* and gets progressively darker. The story itself is one of the psychologically darkest in the series, and the freedom to shoot and edit the film the way he wanted appealed to Milius.

"If you were making this movie at a studio, they wouldn't let you do it. Basically this is kind of a sick movie; it's about a girl who gets kidnapped and raped by a motorcycle gang, and her father, who normally won't confront anybody, kills them. The family kills the bad guys and they're better off for it. That's a pretty anti-social statement, isn't it?"

Joe Dante's *Runaway Daughters* was 180 degrees from the Milius offering in terms of tone, style and story. Dante, who grew up on AIP films and began his own career at Roger Corman's New World Pictures, consciously wanted to pay homage to his AIP predecessors. "I admired the economy with which those films were made and I wanted to make mine in the same spirit and style. *Runaway Daughters* is a little light-hearted, but it's about the repression and regimentation that people felt in the Fifties — the need to try to escape from that, and the search for individuality."

Richard Bowen signed onto the project for the opportunity to work with Dante. A commercial and feature cinematographer, Bowen was fully aware of the limitations and time constraints he would encounter. "You can't get hung up on needing it to look like one of your theatrical films, because it never can. You just have to try conceptually to do some things that are sort of unpolished."

Ironically, the visual references Dante and Bowen used weren't the old AIP pictures but the very stylized, Technicolor melodramas of Douglas Sirk and Sam Fuller. "The biggest reference was probably *Inherit the Wind*," says Bowen, "and some of the images Stanley Cortez [ASC] created for Fuller."

Sam Fuller served as more than just an inspiration for director John McNaughton; Fuller actually wrote the script for this latest version of *Girls in Prison*. McNaughton, who began his career with the low-budget *Henry — Portrait of a Serial Killer*, had been hesitant to undertake the arduous 12-day shoot until two conditions were met. First, the producers had to OK Fuller's script; second, Jean De Segonzac had to be his cameraman. McNaughton and De Segonzac had worked together on an episode of TV's *Homicide*, and the director is effusive in his praise. "As far as handheld goes, I doubt there is anyone better in the world than Jean."

De Segonzac, who shot the Academy Award-winning *Common Threads: Stories from the Quilt* as well as three other Oscar-nominated documentaries, photographed three of the *Rebel Highway* pictures, beginning with McNaughton's. He chose to operate on all three.

The French-born cameraman studied Fuller's films for the director's famous long takes, which go from wide to extreme close-up and then back out again. But Fuller's films were almost exclusively black & white. To explain the color scheme he had in mind, McNaughton introduced De Segonzac to the splashy, lurid world of EC comics, comics so violent, graphic and sexy that they were banned in the Fifties.

***Shannen Doherty and Antonio Sabato, Jr. emanate coolness in* Jailbreakers.**

"John was [aiming for] a sort of comic-book style," says De Segonzac, "where the backgrounds tend to be wild, berserk colors: yellows and reds, magentas and bright greens. The actors are lit mostly in a conventional white light, sometimes with colored backlights, while the background colors change from shot to shot."

Mainly using large fresnels, De Segonzac consciously mimicked the hard lighting preferred in the 1950s, aiming for a *film noir* feel in color. He relied heavily on key grip Pizzuto and gaffer Bob Calnan to help him keep one step ahead of things. "We went over the schedule carefully and made very detailed lighting plans on the location scouts so we could get everything pre-rigged and figured out before we stepped on the set. Sometimes production didn't want to bring the crew in early or pay for pre-rigging, so we had to organize ourselves one way or another, usually by doing an exterior scene where I'd have no one with me but the dolly grip, while the rest of the crew would be lighting the next scene."

McNaughton marveled at his cameraman's abilities and attitude. "There was really no time to light. For one scene that takes place in the office of a record producer, we needed a translight out the window. On *Mad Dog and Glory* we had a translight out the window and I asked my director of photography how long it would take to light it. He said, 'Six to eight hours.' I ask Jean and he says, 'Twenty to twenty-five minutes.' He doesn't know it's impossible. He's so into it, it *is* possible."

McNaughton's enthusiasm for De Segonzac was shared by both Uli Edel and Allan Arkush. After seeing what De Segonzac had shot for McNaughton, Edel showed the cameraman his own favorite comic books. "I wanted to go even further than John did," laughs Edel.

"With *Girls in Prison*, we only used the colors for background," says De Segonzac; "in *Confessions of a Sorority Girl* we actually used them directly on the characters: peacock blue as a backlight and a full yellow as a keylight.

"It was all done with gels on the lights and filters on the camera. For the outdoor scenes I always put a color enhancer on the lens, which makes the reds explode and gives everything a kind of Fifties look and style. We used a gelled 12K HMI for the backlight and controlled it with giant gold reflectors."

Edel had only eight days to cast his movie, choose locations and re-write the script. The project had appealed to him because it was so different from his previous two films — the uncompromisingly brutal *Christiane F.* and *Last Exit to Brooklyn*.

"I wanted to get away from my dark image," explains the German-born director. "When (co-producer) Lou Arkoff called, he told me the script was a psychological drama. I read it and told him, 'No, it's a comedy!'

"I did the film from the point of view of someone living in the Nineties, looking back on the Fifties. I was more interested in the kitsch of the Fifties and saw *Sorority Girl* as having the look of that whole kitsch culture. That's why the first time we see the protagonist, she is trying to kill the kitsch icon of the Fifties, the pink poodle."

De Segonzac laughs when apprised of Edel's comment. "(Series screenwriter and co-producer) Debra Hill was thinking melodrama, but Uli and I were thinking high comedy."

Both Edel and his cameraman appreciated the freedom they were given in both styling and shooting the picture. The final scene in the film consisted of five pages of dialogue, but the crew had only a half-day left in which to shoot it. "I knew we couldn't do it," says Edel, "so I said 'We just have to improvise,' and we shot the whole scene in slow motion with no dialogue, just music."

"And there was no one running up and down the beach yelling at us," adds De Segonzac. "We didn't have to check with the producers when we made a decision like that. Debra was probably a little upset, but she didn't show it."

Edel believes that the short production schedule was

***Teresa Dispina, Aimee Graham and Eleanor O'Brien do some yardwork in* Reform School Girl.**

actually a blessing, allowing the filmmakers to take chances and do things they never would have allowed themselves to do on a normal, 60-day shoot.

For both *Girls in Prison* and *Confessions of a Sorority Girl*, De Segonzac relied on a system of storyboarded index cards which he devised for himself. After discussing the kind of shots he and the director want, he makes index cards describing each individual shot. The cards are kept on a clip. "When I go into a scene I can look at my cards and say, 'We have eight setups,' and be able to shuffle them into any order that makes sense from a technical or continuity point of view."

On *Shake, Rattle and Rock*, — Allan Arkush's film and the sole musical in the series — De Segonzac threw his card system out the window. "I kept saying to Allan, 'Shouldn't we be getting together and discussing this?' And he'd say 'Naw, don't worry about it. I always over-prepare for these things. We'll just show up in the morning, look at the rehearsal and then shoot it.' He did say, 'We'll do some [scenes at] six frames and 12 frames and print them for 24,' little effects like that. We'd literally just see the scene, come up with some shots and shoot them off. It was really a lot of fun."

Despite his seemingly laissez-faire attitude, Arkush knew in some detail what he wanted and knew the pace he needed to maintain in order to get it. The key to shooting low-budget films, he claims, is understanding your limitations and using them.

"You walk into a situation and the first thought is: 'What do I not need to put in this scene that will slow me down?' Then you ask, 'How can I stage this scene in the most efficient manner so that I'm not using ten shots when four will do?'"

The director credits his many years in television with teaching him how to quickly and effectively stage a scene. According to Arkush, staging is the heart of any television drama, and the way the actors move in relation to the camera serves to heighten the drama within the scene.

Arkush wanted *Shake, Rattle and Rock* to be full of movement, whipping from one character to another, adding to the rock'n'roll energy. De Segonzac's specialty is handheld camera, and nearly the entire movie was shot that way. Sets were built to show all four walls, allowing a number of 360-degree turns. Being able to see in all directions gave Arkush a lot of freedom in the staging, but it compromised the lighting. De Segonzac ended up doing a basic lighting setup, illuminating whole areas rather than specific moments or shots.

The director and cameraman had differing ideas about the look of the film, a potentially sticky situation. Arkush wanted a soft image and suggested that his cameraman put a net behind the lens. "I was nervous about it, because I had the opposite idea," says De Segonzac, who had recently viewed *Touch of Evil* and was enthralled by its deep-focus style."I wanted to do a very, very deep focus."

Arkush gave him free rein, and the cinematographer ended up using a black ProMist filter instead of the net to keep things a little sharper.

Arkush is particularly proud of the film's title sequence. "I'm a big fan of De Kooning's 'women series,' and I wanted to do something that looked like abstract expressionism with rock music. In a couple of other shows I did I had stumbled onto something with camera speeds that I thought might work here. We shot [a singer] singing and dancing along with a Little Richard tune at six frames per second and had each frame printed four times; then we shot at 12 frames per second and had each frame printed twice. So you're back in sync again but you're freezing frames, sometimes freezing them when she's totally in motion. As you're looking at it, the picture becomes a blur, clears up, then becomes a blur again. It came out exactly as I wanted it to; it looks just like the De Kooning series."

De Segonzac was new to Agfa films stocks and was enthusiastic about what he learned. "Agfa tends to mute and, because we were using such wild color combinations, it created a pastel look which worked well for what we were doing. We could have muted the colors with Kodak (the stock he normally uses), but with the Agfa it was there right away and wasn't too electric."

Cary Fisher also liked using the Agfa on William Friedkin's *Jailbreakers*. "I didn't want to have a heavy look, and Agfa is very tolerant of contrast and color. Because the film was going to TV, the only thing I asked for was to remove most of the reds from the film. Reds on video tend to bleed or get that intense [brightness] that pops out like mad on TV or video. I asked the art department to remove as many of the reds as they could. If something red already existed, like a brick walkway, that was okay; but if we could avoid having a red car or curtains or wardrobe, it helped."

The English-born Fisher, son of cinematographer Gerry Fisher, learned how to use Agfa by operating for British cinematographer David Watkin, BSC — Agfa is Watkin's preferred stock. "I know how David approaches it, and I was able to use some of that knowledge. Basically you overexpose it. You can't underexpose it, but it will take any amount of overexposure."

The biggest problem on the set was the Fifties cars, which frequently broke down, didn't handle well, and couldn't go very fast. Making chase sequences look exciting when the cars won't go over 30 miles per hour is tricky. "We got frustrated," Fisher admits, laughing. "The cars cost us more time than anything else."

Fisher was particularly proud of one automobile shot in which the crew took the hood off the car and mounted a camera

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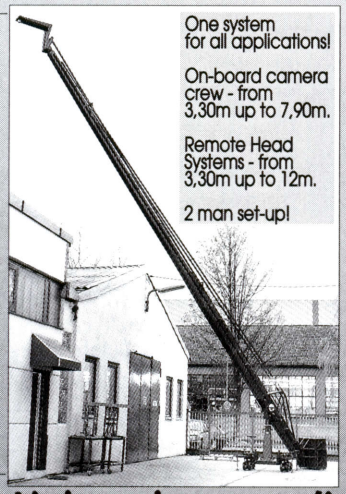

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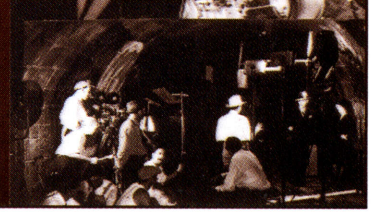

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low on a Hot Head. "We did a running shot that started by looking forward, with the road rushing toward you, then panned around to two couples sitting in the car with a police car driving up the back. It was a nice shot."

Friedkin (who was unavailable for an interview for this article) doesn't storyboard and was the only director of the "Rebel Ten" who didn't use video assist. Fisher, who had worked with him twice before, praised the director for knowing exactly what he wanted on the set and communicating it clearly.

Cameraman Roberto Schaefer had never met Ralph Bakshi before *Cool and the Crazy*, but the two men clicked immediately. "Working with Roberto was like working with one of my key animators," enthuses Bakshi, best known as the director of *Fritz the Cat* and *Heavy Traffic*. "He understood what I wanted and I understood what he wanted. He trusted me and I trusted him. And I've never seen a man move faster."

The film marked Bakshi's first all live-action film and Schaefer's first American feature (after working for several years in Italy). Because *Cool and the Crazy* was the first film to go into production, they had an extra week of prep; Bakshi used the time to storyboard everything, then he and Schaefer sat down with first assistant director Michael Amundson and went through the entire script, shot by shot. Although open to spontaneity on the set, Bakshi stuck pretty closely to his sketches.

The New York-based director wasn't interested in recreating the typical Fifties fantasy; he didn't want the film glorifying cars or girls. Instead he opted for a darker, moodier, New York club look and feel.

"It was jazz-driven, not rock-driven," says Schaefer, "Miles Davis, Coltrane. Even when there was rock music playing, the feeling was supposed to be the Beat Fifties."

Most of the film was shot at night. "I love people stepping in and out of shadows," explains Bakshi. "If you walk down any street in Manhattan at night, people disappear into the blackness and re-emerge in the spotlight. I love to shoot that way."

Confirms Schaefer, "There were many pools of light — underlit things, going in and out of light, a feeling that something is happening but you're not sure what it is."

Schaefer used Kodak 5296 for night exteriors (98 wasn't yet commercially available), 93 for most studio interiors and 48 for daytime exteriors. He explains that he routinely overexposes film from two-thirds to a full stop in order to get a fully saturated negative, with rich blacks and full colors.

Bakshi favored a fairly classical camera style, with frequent dolly moves. Handheld was used sparingly and always for effect. Schaefer says one of his favorite scenes took place inside a jazz club, where he used a Speed Aperture Computer to do speed changes while shooting. "We'd go from normal to slow-motion and back to normal in order to create a dreamy, drug-induced sort of feeling, because the characters were getting drunk and smoking marijuana. We were trying to get that jazzy, be-bop feeling."

Because the anthology series was being televised, the film was transferred to and edited on tape. The telecine process turned out to be the hardest adjustment for Schaefer.

"You don't get to control any of your transfers," he explains. "Having video dailies is so frustrating — trying to talk to the guy over the telephone, telling him one thing and then getting something back that looks totally different. I realize they have to set the dailies to a middle ground so that they know they have the information on the tape when you do your final correction, but it was still very frustrating."

Schaefer also shot *Roadracers* for Robert Rodriguez, the 25-year old wunderkind who, the story goes, made *El Mariachi* for a mere $7,000 using a 16mm, non-sound camera with just a zoom and a wide-angle lens. Rodriguez had never worked with a crew before, and both sides had to adjust.

"I didn't know what most of them did so I wasn't able to take advantage of them," admits Rodriguez. "I ended up doing things the old way because we had such a short schedule and it was the only way I could get the setups I was used to. The first day I let the crew do their thing and by the end of the day I hadn't gotten (half) the setups I thought I would. The crew, on the other hand, was congratulating me for getting 45 setups that day, breaking the record up to that point."

"I wanted to shoot Robert's film on Super 16," says Schaefer, "because I knew from my discussions with him how he wanted to work." Schaefer proposed having four cameras, each one fully contained. The producers, however, had a contract to deliver a 35mm negative and nixed the idea, even after the cinematographer pointed out that they could shoot on 16mm and blow it up to 35mm.

"[Blowing up 16] doesn't save money in the long run, but it allows you to shoot much more film stock for the same amount of money," explains Schaefer. "Remember, you're not going to blow up everything, just your final negative cut."

As it was, the filmmakers always seemed to have three cameras flying through the air, with both Schaefer and Rodriguez operating. Schaefer realized that they would need lightweight cameras with batteries attached. "We broke, tore or shredded at least four camera battery cables because Robert would just pick up the camera and run with it, pulling the connector out."

Rodriguez, who edited the picture himself, knew exactly

what shots he wanted and made sure he got them. He ended up using every single shot in the finished film, which he says contains more than 3,000 cuts.

The title sequence is a hair-raiser. The camera, positioned low to the ground on a camera car, points up at an old Chevy as it races down the street and screeches around a corner. "We had a poor man's remote head," explains Schaefer. "Mounted on the back of the speed rails was a four-foot jib arm, overhanging the back of the camera car, with a Ronford 7 head underslung. I had a small video monitor on the jib arm.

"I had a safety belt on and was just leaning over the back of the camera car. The camera was down at ground level as the car raced down the street, probably at around 40 mph, although it felt like 60. I was just operating with a handle — there was no remote head — while looking at the video monitor.

"We wanted the fast, low wide-angle look to accentuate the speed, so we were at the minimum safe distance between the camera lens and the Chevy. It was only about five feet. We rehearsed, but shot the rehearsals. We had two cameras on the camera car: one low and the other one higher up with a longer lens to pick up singles."

Speeding cars also played an integral part in Mary Lambert's *Dragstrip Girl*. "My big dictate to the transportation department was, 'Don't get me the coolest car you can, but a car that will run!'" laughs the director.

Shooting actual drag races proved to be a major headache due to the time and budgetary restrictions. The film was reportedly one of the most difficult of the series, partially because 70 percent of it was shot at night in vast areas like Hanson Dam.

"We were spread out over a huge area, probably a mile wide," says Lambert. "It was the middle of the night; there was no natural light and no work lights.

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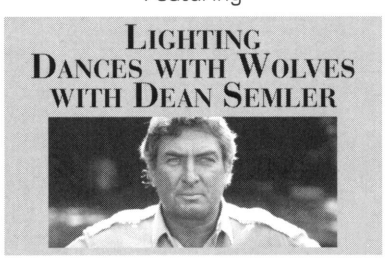

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The crew members couldn't see one another."

For the nighttime drag-race scene, camerawoman Sandi Sissel, ASC used Kodak 5296 and set the lens wide open. She chose long lenses in an effort to compress the images to make the light go further.

Sissel also used the dust which, in this case, conveniently covered the ground. "It's amazing what you can do with dust," she laughs. "You get a lot of nice backlight when you have it in the air. You can get away with less lighting when you have a backlight that carries a long distance, which was the case with the dragstrip sequence. Because this was a construction site, though, they automatically wet down the area at night. I asked them not to because I wanted all the dust. It was the opposite of the usual problem. During lunch we'd be going around with trucks trying to kick up as much dust as we could."

Sissel, who shot the third film in the series, had to push the production company to rent a Musco for the scene. The producers quickly realized how invaluable the huge light was. Without it, cinematographer Jim Chressanthis says, shooting at Griffith Park Observatory in the fog would have been nearly impossible. "I had to light the fog behind the dome," explains Chressanthis, who shot Jonathan Kaplan's *Reform School Girl*. "It's not usually foggy there and we ended up having to use the entire Musco light at full spot; that's the equivalent of six 12Ks. It's an amazing amount of light.

"We needed the Musco for a couple of road scenes that night. To put up 12Ks and Condors would have been very wasteful; it takes longer and they're not as good. The Musco light moves in 15 minutes and you can pan and control things much quicker. Plus, you have more throw. We got three night setups with the Musco; using conventional means, it wouldn't have been possible."

Perhaps the most stunning visual achievement in *Reform School Girl* is a transition from a scene in which the heroine, Donna, is arrested by police in a back alley, to a courtroom scene in which she is arraigned. Screenwriter (and sometime director) Bruce Mead didn't want the standard establishing shot of a courtroom, and instead created an imaginative alternative.

As the sequence begins, Donna is running down the back alley in a wide shot, toward the camera. She then looks back at a motorcycle cop chasing her. A second police motorcycle skids in front of her, and she turns toward it. As she is turning her face, Chressanthis cuts to a medium close-up of her and the motorcycle lights playing on her face — everything else is black. While Donna is turning toward the camera, the surrounding scene changes. She is no longer in the back alley but in the courtroom.

Chressanthis explains that the medium close-up of Donna was actually shot on the courtroom set. All of the lights were on dimmers, and as the motorcycle lights dimmed, the courtroom lights came up, creating a cross-fade between the cycle effect and the courtroom lighting. Donna's medium close-up was shot at 48 frames per second, so she turns her head in slow-motion. During the cross-fade, the camera is dollying back to reveal a wider shot of the courtroom, which is now fading in. Donna is left standing in the courtroom, and the visual effect is striking.

Two cameras were operating for eight of the 13 shooting days; without them, it would have been impossible to get all of the shots Kaplan wanted. But using two cameras comes with a price. Kaplan explains: "I think sound suffers more than anything on a low-budget film. When using two cameras — one on a wide shot and one tighter — the main audio problem is the sound on the tighter shot, be-

cause the scene has to be miked for the wide shot. Obviously, the mike has to be out of view of the wide shot, so you're not getting really good sound on the close-up. As a former editor, I know you always rely on the close-up sound to get you out of any problems on the wide sound."

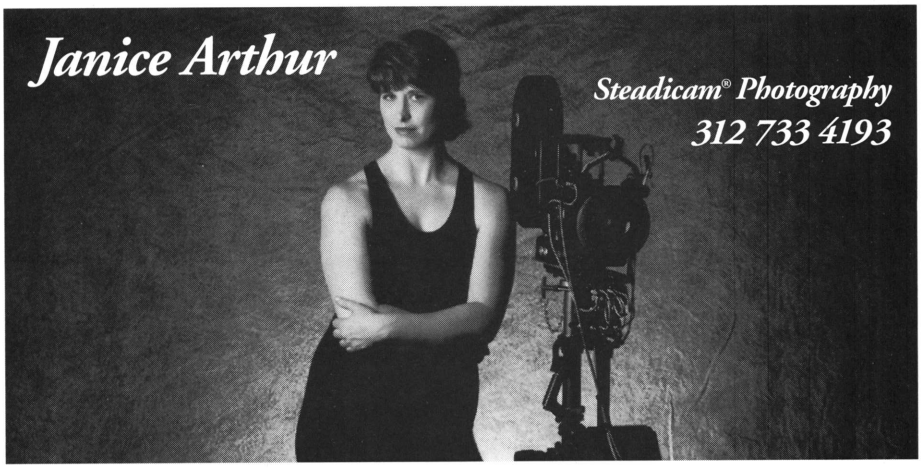
Kaplan says he tries to avoid looping on features, and will do extra takes just for sound. On a low-budget film like *Reform School Girl*, however, that's not possible, and he had to loop.

As with several of the teams before them, Kaplan and Chressanthis made a strong artistic and emotional connection. "He's just the kind of guy who would be doing this if he had to scrounge an 8mm camera in the desert," says Kaplan. "And that's what you need on this kind of film."

"I've never had such a good collaboration," echoes Chressanthis, who had been wanting to work with the director ever since seeing *Heart Like a Wheel* back in 1983. "I found a soul mate in Jonathan."

That feeling was shared by many of the directors and cinematographers who worked on *Rebel Highway*. For all of the long days and the constant frustrations, most found the experience as invigorating as it was exhausting. "I think we went 22 hours one day," says John Milius. "I was always amazed we really got it done.

"I'm not one for big preparation," Milius adds. "I like planning, to let everybody know what we're trying to get, but then the fog of war descends and that can be really interesting. What do you do when everything goes awry? You end up with something like the lawyer scene, the scene I'm most proud of in the entire movie. You hear about people being control freaks and perfectionists. I'm convinced that nothing good ever gets done that way. Everything that's really good is done slightly out of control."



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Emmys Salute Year's Finest Work in 4:3 Frame

Seven cinematographers are singled out for their small-screen achievements.

by Stephen Pizzello and David Heuring

Flying in the face of critics who condemn television's "lack of choices," this year's crop of Emmy-nominated cinematographers offered something for everyone. Fans of Western drama could sate themselves with Kees Van Oostrum, ASC's fine photography on CBS' *Return to Lonesome Dove, Part 2*, Donald M. Morgan, ASC's exciting treatment of TNT's *Geronimo*, and Roland "Ozzie" Smith's outstanding weekly work on NBC's *Dr. Quinn, Medicine Woman*. If you sought a good scare, Edward J. Pei offered chilling camerawork on *Stephen King's The Stand* for ABC. Science fiction? Kenneth Zunder had that base covered with *seaQuest DSV*. John Alonzo, ASC tackled historical docudrama with NBC's *World War II: When the Lions Roared*, while Ralf Bode, ASC provided a lavish screen treatment of the stage musical *Gypsy*.

In crafting award-worthy representations of nearly every genre, these cinematographers — and their crews — proved that determination, ingenuity and artistry can always triumph over the tight budgets and time constraints endemic to television production. Creative experimentation was the norm, not the exception, and the results should silence even the most ardent big-screen exponents. With accomplished cinematographers behind its cameras, television is equally capable of providing memorable moments of drama, excitement, and inspiration.

In the following pages, 1994's Emmy nominees offer some insights and opinions on their superlative work.

Cinematography for a Series

Roland "Ozzie" Smith
Dr. Quinn, Medicine Woman
"Where the Heart Is"

Having already taken home a 1994 ASC Award for this episode, Smith has his sights set on his first Emmy. Following in the footsteps of his father, the legendary Harkness Smith, ASC, the younger Smith began his career in the camera department at MGM, where he met an array of top-flight mentors, including George Folsey, ASC, Karl Freund, ASC, James Wong Howe, ASC and Robert Surtees, ASC. After soaking up the considerable wisdom that surrounded him, Smith moved up the ladder and achieved his dream of becoming a director of photography. Prior to *Dr. Quinn*, his television work included *Street Justice* and *Alien Nation*.

With accomplished cinematographers behind its cameras, television is equally capable of providing memorable moments of drama, excitement, and inspiration.

Smith's weekly rounds on *Dr. Quinn* require him to convincingly convey the atmosphere of the show's period setting, an 1860s Colorado mining town (the "town" is actually located in Agoura Hills, CA). The cinematographer's methodology is dictated by the fact that the show is shot in 16mm. After researching other shows shot in 16mm, Smith concluded that he would have to avoid high-speed film because of grain problems. He sought out the two finest-grained stocks he could find, Kodak's 7245 and 7248. Because 16mm cameras lack dual-pin registration, camera stability and filtration are also crucial considerations. The camera's limitations, as well as the show's high number of exterior shots, led Smith to avoid the use of diffusion to ensure a full transfer.

The show's overall look — warm tones, rich blacks, and color saturation — was inspired by Vilmos Zsigmond, ASC's naturalistic work on *McCabe and Mrs. Miller*. Smith's undiffused photography is a departure from Zsigmond's approach, but the cinematographer explains that a soft look, while acceptable in 35mm, tends to lose depth and sharpness in 16mm.

Smith further enhances the look of the show by enlisting the aid of Digital Magic in post-production. The company's work helps him to maintain a consis-

tent sky in scenes that may be shot over a period of hours, and to balance the exposure of the show's romantic couple, Jane Seymour and Joe Lando, who tend to reflect vastly different amounts of light. Smith has also found that Digital Magic can help him compensate for his cameras' inability to vary shutter speeds, a problem which forces him to rely upon dissolves and f-stop changes.

Kenneth Zunder
seaQuest DSV
"Such Great Patience"

Delving to the depths of the ocean on *seaQuest DSV* has allowed Kenneth Zunder to plumb his creative instincts and give the show a distinctive aquatic look. Zunder's work on the show's pilot earned him a 1994 ASC Award nomination (following previous ASC nominations for his work on the critically hailed series *thirtysomething* and *Brooklyn Bridge*), while his Emmy nod recognizes his eye-catching photography on the episode "Such Great Patience."

After studying art history at Harvard, Zunder earned a master's degree in documentary filmmaking from Stanford University. He realized during his junior year that film would be his life's work, but he was undecided about whether he should pursue cinematography or editing.

His choice was an auspicious one. After graduating, Zunder went on to assist such distinguished directors of photography as Laszlo Kovacs, ASC, Bobby Liu, ASC (*Lou Grant*), Phil Lathrop, ASC (*Airport '79*, among other films) and Michael Chapman (*Personal Best*). Tom Del Ruth, ASC gave Zunder a shot as a first assistant and operator, and the two worked together on *The Breakfast Club* and *The Running Man*. Zunder's other credits include *True Believer* with John Lindley and *Rain Man* with John Seale, ACS.

In August of 1989 he was promoted from camera operator to director of photography on *thirtysomething*. After 2 ½ years on the show, he moved to *Brooklyn Bridge*.

Zunder clearly relished the unusual photographic opportunities afforded by the fantastic

> **"When I could, I incorporated the water into the design of the shot by throwing watery reflections on the actors or on the walls behind them." — Kenneth Zunder**

nature of *seaQuest DSV*. "The stories were set on a submarine, but there were no windows looking out into the water," he notes. "The challenge was to constantly remind the audience that the action was taking place underwater. I used a lot of stylistic touches to aid that feeling: we used a lot of blue light, and we took advantage of three sets equipped with water tanks. When I could, I incorporated the water into the design of the shot by throwing watery reflections on the actors or on the walls behind them."

The cinematographer's work was further augmented by a number of high-tech techniques, including rear-screen video projection and computer-generated imagery, but his ultimate goal on the show is expressed by a simple mantra. "My motto is 'Tell the story, tell the story, tell the story,'" he said. "That's the most important thing to me."

Cinematography for a Miniseries or Special

Donald M. Morgan, ASC
Geronimo

Morgan is a regular on the awards circuit, having amassed an Emmy for *Elvis* as well as an Emmy and an ASC Award for the Movie of the Week *Murder in Mississippi*. Like Ozzie Smith, Morgan has already taken home an ASC Award for his entry in this year's Emmy competition. His feature credits include *Used Cars*, *A Piece of the Action*, *Christine* and *Starman*.

Geronimo presented the cinematographer with a typical television challenge: lending the visuals an epic feel on a limited budget. Employing the kind of ingenuity and craftiness that only comes with years of experience, Morgan and director Roger Young managed to infuse the Western tale with excitement. "The way Roger staged the Indian fight scenes made it look like we had a lot more going for us than we actually did," says Morgan. "That's his magic and hopefully part of mine. We were able to get an awful lot on the screen."

In addition to photographic sleight-of-hand, Morgan resorted to using every available body on the set to beef up the ac-

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SERIES

Roland "Ozzie" Smith
Dr. Quinn, Medicine Woman
"Where the Heart Is"

Kenneth Zunder
seaQuest DSV
"Such Great Patience"

MINISERIES OR SPECIAL

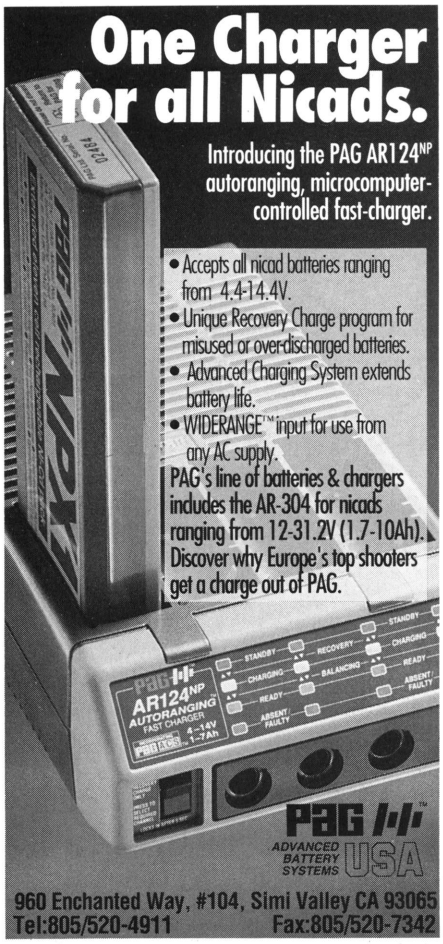
Donald M. Morgan, ASC
Geronimo

Kees Van Oostrum, ASC
Return to Lonesome Dove, Part 2

John Alonzo, ASC
World War II: When the Lions Roared

Ralf Bode, ASC
Gypsy

Edward J. Pei
Stephen King's The Stand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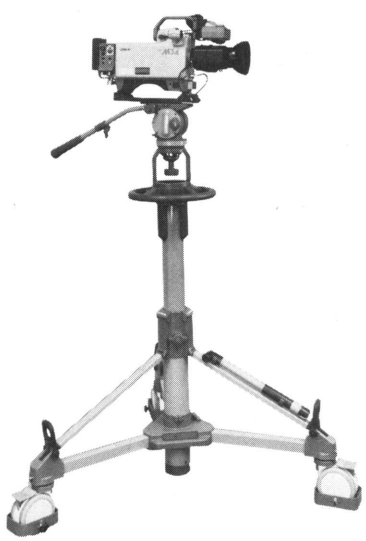

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tion. "We chose angles that made it look like we had a lot more Indians than we did. If we had even one person out of frame, we'd call him over and put him somewhere. There was not one wasted body. We would compress the actors with long lenses, but sometimes when we were close and down in water, we would roll three cameras and [arrange] background action so that someone was doing something for each camera. Then we would criss-cross between cameras so that we could keep as many people in each shot as possible."

> **"So I learned a lesson about movies — they're not everything."**
>
> **— Donald M. Morgan, ASC**

Morgan made extensive use of filters on the project in his aim to achieve an old-fashioned look to match the historic Arizona locations, such as Old Tuscon. "I used Tiffen tobacco filters, low-contrast filters and soft effects filters, either all at once or just some of them. The filters gave the film an old-fashioned look, while the Indians' skin tones [in combination with] the tobacco filters also helped a lot."

The director of photography occasionally departed from his strategy for dramatic purposes. "When the Indians were on the reservation, I took all the warmth out of the filtration," he says. "I took off the tobacco filters and put double fog filters on, so that the scene would glow just a little bit. We made it as hot and washed-out and uncomfortable-looking as we thought it probably would have been."

Adding to the logistical problems of the *Geronimo* shoot was some punishing weather that wreaked havoc on the production. "We had some real problems with the monsoons," Morgan recalls. "Once time I had an entire night camp on a hill lit and ready to go, and a terrible rainstorm almost washed out the whole setup. They wanted to wrap because of the lightning, but I kept saying, 'I've never seen anything prettier than this.' Finally we had to go, and I kept arguing all the way down the hill. When we got back, we found out that three or four of our guys had been hit by lightning while loading the electrical truck. So I learned a lesson about movies — they're not everything."

Morgan recently served as director of photography for the aerial unit on the upcoming feature *Terminal Velocity*.

Kees Van Oostrum, ASC
Return to Lonesome Dove, Part 2

Van Oostrum is another Emmy hopeful who has already collected an ASC Award for his nominated work. Prior to his 1994 ASC win, he had collected an ASC nomination for *Burden of Proof*, as well as an Emmy nomination for *Miss Rose White*. Other television credits include *Son of the Morning Star, Oliver North, Somebody's Daughter, Never Forget, The Incident* and *The Last Elephant*. He has also served as director of photography on the features *Blue Heaven, A Certain Fury, Gettysburg* and the forthcoming *Separate Lives*.

Taking the reins on the followup to the highly successful miniseries *Lonesome Dove* gave Van Oostrum a chance to create sweeping vistas for the small screen. When asked if he missed the freedom afforded by larger theatrical formats, Van Oostrum replies, "I focus on good material. I don't think it matters whether [a project is] a feature film or a television program. I have a lot of good relationships with directors in television, but I'm also interested in features."

On *Return to Lonesome Dove*, Van Oostrum took full advantage of the magnificent Montana landscapes that served as the miniseries' primary locations. "We went for a very strong Montana feeling and used the scenery as much as possible to give [the show] a more epic look," he says.

"This is the 'promised land' the characters talked about in the first *Lonesome Dove,* so the images had to be very pictorial, with vivid colors."

Van Oostrum hewed closely to his philosophy of letting the script dictate his photographic approach. "I think *Lonesome Dove* is more a drama that deals with the land and the people who try to live on it," he muses. "[The story] is very character-driven, so the dramatic mood of a scene is pretty much determined by the material and the actors."

The cinematographer, who serves as his own camera operator, customarily brings the same crew with him to his different projects, and is quick to salute their contributions to his success. "To me, this nomination reflects the excellent work by my whole crew and the other people who worked on the show, because *Return to Lonesome Dove* really was a very big enterprise and a huge effort."

"This is the 'promised land' the characters talked about in the first *Lonesome Dove,* so the images had to be very pictorial, with vivid colors."

— Kees Van Oostrum, ASC

John Alonzo, ASC
World War II: When the Lions Roared

After years of outstanding work on feature films, Alonzo has proven that talent transcends format, garnering his first Emmy nomination. *When the Lions Roared* is merely the latest laurel on an impressive resumé that includes the features *Harold and Maude, Chinatown* (which earned Alonzo an Academy Award nomination), *Norma Rae, Blue Thunder, Scarface, Steel Magnolias* and *Internal Affairs,* to name just a few.

Lions, which originated in high-definition, gave Alonzo

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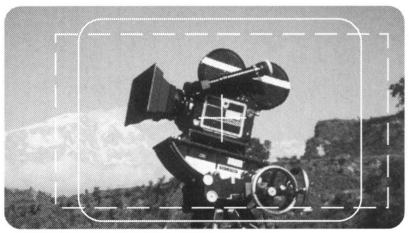

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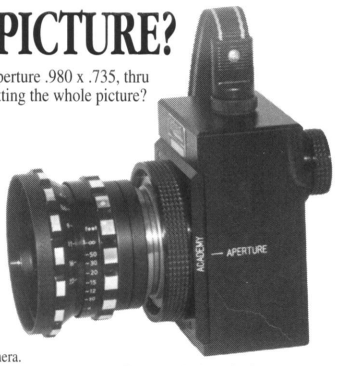

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the chance to explore the compositional techniques of the future. Funded by CBS and Japan's NHK, the project was shown in HD in Japan, where nine hours a day are allotted for HD broadcasts.

"Joe Sargent, the director, had his hands full because we had to compose for both HD (16 X 9) and NTSC (4:3). I love the wide screen, but this was a wonderful experience. I'd never worked with television lighting directors before, which they had at CBS. I took a big chance when they offered me their crew. I said, 'Sure, why not, it's an electronic medium, maybe they can teach me something.' It turned out to be a great collaboration. Rod Yamone was my lighting director; I was able to bring to him the ideas of what we do in film, and he taught me a lot about the eccentricities of electronics."

> **"Sure, why not, it's an electronic medium, maybe they can teach me something."**
>
> **— John Alonzo, ASC**

Using Sony HD-500 cameras, Alonzo took note of the unique properties of the high-definition format. "If anything, we had a wider scope," he says. "This particular electronic high-def system has nothing to do with NTSC, or television as we know it — it's like a different film stock. It's rated at 500 ASA, and it's far more sensitive, with a huge range of over- and underexposure. With help from the colorist and the video operator, we were able to manipulate the image — we were actually timing the picture as we shot it. That was wonderful — it was like seeing the dailies right there, even before we committed to tape. And even after you've committed to tape, you can manipulate [the images.] There are no limitations.

"To be able to color the image the way you want, right then and there, is a cinematographer's dream. You can say

to the timer, who's sitting right there with you, 'Give me a little more magenta here and a little less blue there,' and suddenly you have an image that looks just the way you want. When you shoot another scene the following week that needs to match something you've already shot, you can call up the earlier scene on the screen and match it by eye. You can also use the memory function to recall the board settings for the earlier scene.

"I want to stress the fact that HD is *not* a replacement for shooting movies," he adds. "It's just another system. HD has a different look. It doesn't have a TV look, and it doesn't have a film look. It has something you haven't seen before."

Ralf Bode, ASC
Gypsy

Like Alonzo, Ralf Bode is a feature cinematographer making his debut at the Emmy ceremony. With *Gypsy*, he added a musical adaptation to an accomplished list of credits that includes the features *Saturday Night Fever*, *Coal Miner's Daughter* (which earned him an Oscar nomination), *Dressed to Kill*, *Gorky Park*, *Bring on the Night*, *The Accused* and *One Good Cop*.

In adapting the well-known stage play for the small screen, Bode sought to give the visuals a stylized, color-saturated look similar to the Technicolor

> **"But Emile's approach is to concentrate on the material and to avoid overwhelming the story with too many camera pyrotechnics."**
>
> **— Ralf Bode, ASC**

spectaculars of yesteryear. Because the play's authors, Arthur Lawrence (book) and Stephen Sondheim (lyrics) were opposed to any changes to their work, the screen version of *Gypsy* remained absolutely faithful to the source material. "We basically did a

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stage play on film," says Bode. "We shot primarily on sets; I think there was one dream sequence that takes place in an alley and we actually shot it in an alley. But because most of the staging took place inside, we tried to keep the camera moving as much as possible."

The entire production took place in Los Angeles. Theater footage was shot at three venues, the Orpheum, State and Palace theaters in LA's downtown area. Sets were shot at Van Nuys' City Studios, directly next to an airport — "a great place to shoot sound," Bode says sarcastically.

Bode took full advantage of all of the elements at his disposal. "It started with the costuming (by Bob Mackie) and the production design. In terms of the lighting, I used a lot of filtration; I don't think there was a white light in the picture. Then I worked very closely with CFI, who gave me an absolutely wonderful negative. The timing was really superb."

While Bode and director Emile Ardolino (with whom Bode had previously worked on *The Nutcracker*) kept the camera moving to capture the dance moves, they also tried to show a degree of tasteful restraint. "Whenever there was dancing, we used more than one camera to cover the action. Dancers get tired, so you have to get the medium and wide shots. But Emile's approach is to concentrate on the material and to avoid overwhelming the story with too many camera pyrotechnics. The material is always the most important element."

Edward J. Pei
Stephen King's
The Stand

Pei, a native of Taiwan, arrived in America in 1979 and obtained a graduate degree in film from New York University. After working as a second assistant cameraman, he put in time as a first assistant cameraman and

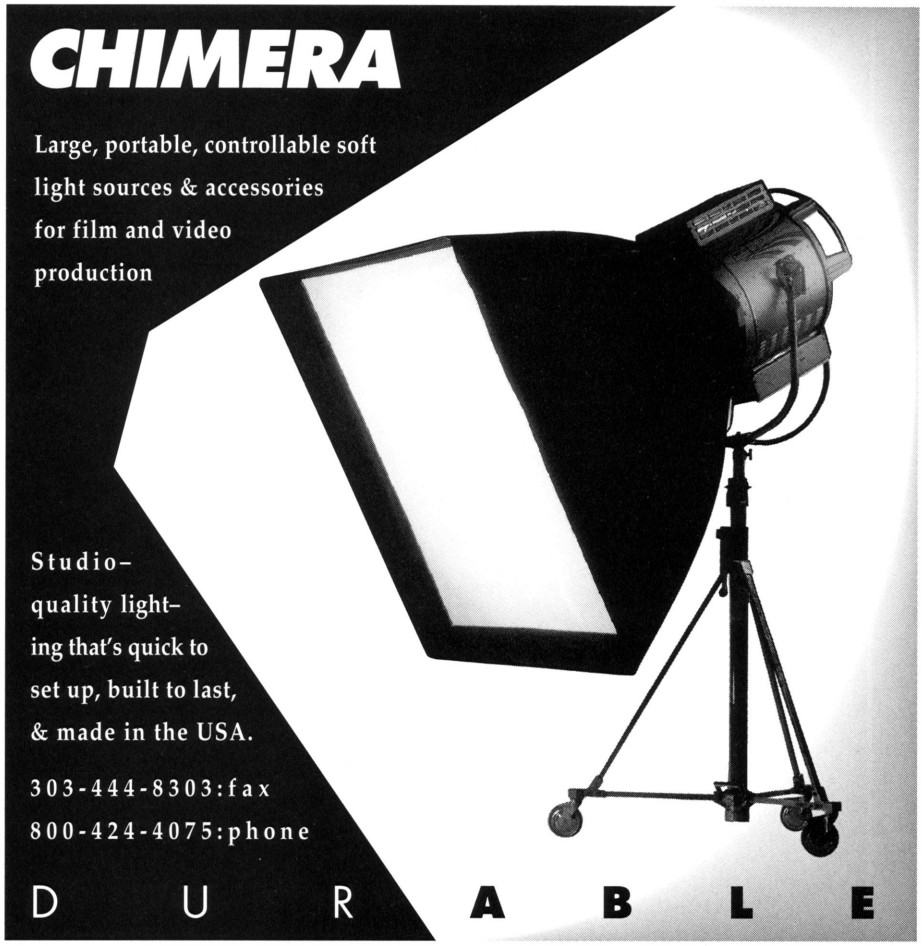
operator before achieving his goal of becoming a cinematographer. In addition to *The Stand*, he has shot a pair of other miniseries (*The Last Confederate Widow* and *The Gambler 5*), and recently collaborated with director Mario Van Peebles on the upcoming

> **"The moving camera was sort of an homage to old horror films, which always had a lot of push-in zooms and other moves. We were having fun with that look; we didn't take ourselves too seriously."**
>
> **— Edward J. Pei**

feature *Panther*. He has also won a cable ACE award, for his photography on the Lifetime series *Veronica Claire*.

On *The Stand*, Pei and director Mick Garris (who directed the Stephen King story *Sleepwalkers* for the big screen) mixed two major looks: reality and a more dreamlike ambience that lends an increasingly bizarre feel to the proceedings. "I used a lot of colors in the dream sequences, and did lots of work with the hot head; the camera was always moving. The moving camera was sort of an homage to old horror films, which always had a lot of push-in zooms and other moves. We were having fun with that look; we didn't take ourselves too seriously. Stephen King himself was often on the set, offering pointers. *The Stand* was a 10-day shoot, and most of the filming took place in Utah. We also did some location stuff in New York, Pittsburgh, the Mojave Desert and Las Vegas."

When asked how he enjoyed the assignment, Pei echoed the enthusiasm of his fellow nominees. "We had a great cast, and the shoot was really a lot of fun. But then again, I have fun on every job, so. . ."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Star Trek Meets *The Next Generation*

Cinematographers Gerald Perry Finnerman, ASC *(Star Trek)* and Marvin Rush, ASC *(The Next Generation, Deep Space Nine)* bridge television's generation gap and discuss their experiences at the Final Frontier.

by Bob Fisher

When the first *Star Trek* pilot was filmed 30 years ago in 1964, creator and executive producer Gene Roddenberry wanted Lloyd Bridges to play the role of Captain Christopher Pike, but the actor turned him down. Jeffrey Hunter subsequently played the role, but the pilot never aired in its original form. Network executives felt it was too cerebral, and that Spock was too satanic for the public taste.

A second pilot, made in 1966, was to showcase Jack Lord in the captain's role, but Roddenberry and Lord couldn't come to an agreement. That opened the door for the inimitable William Shatner.

Since *Star Trek* first aired on September 8, 1966, there have been three additional TV series, seven feature films (with the latest due next month), well over 100 books, multiple videocassettes and laserdiscs, in addition to endless streams of merchandise. A poll several years ago indicated that 53 percent of Americans consider themselves *Star Trek* fans.

In 1987 Paramount Communications redefined the television landscape when they bypassed the three main commercial networks and released *Star Trek: The Next Generation* in first-run syndication. A slew of other original programs and movies made for first-run syndication have followed in its wake.

In many significant ways, *Star Trek's* 28-year lifespan has encapsulated the contemporary history of television film. The original 1966 series was photographed by Gerald Perry Finnerman, ASC. *Star Trek: The Next Generation* was shot by Marvin Rush, ASC, who subsequently went on to shoot *Deep Space Nine,* and is currently filming *Star Trek: Voyager.* The two collaborated last year when the original *Star Trek* cinematographer filmed many of the background elements used for digital compositing of *Deep Space Nine* scenes.

In a recent conversation in which the two compared *Star Trek* memories, Finnerman recalled his initial involvement with the show. "It was a fluke," he says. "I was working with Harry Stradling [ASC] on *Walk, Don't Run* in Japan. After we got back, we were working at Columbia for about a month. Harry came to me one day and said that Desilu was starting a TV series called *Star Trek.* They had asked his son, Harry Stradling, Jr., to shoot it, but he was already committed to *Gunsmoke.* I didn't think I was ready — I was only 32 — but Harry encouraged me to talk to them. A Desilu executive said they would let me shoot an episode, and if they liked it, I could do the next one. I really wanted to work with Harry on *Funny Girl,* but he told me to try shooting *Star Trek* for 30 days. He said I could come back if it didn't work out."

Three days after he was hired, Finnerman was making suggestions. Scenes staged on alien planets were normally shot against a white cyc background, but the setting was sterile. "It had no depth, so I asked if I could read three or four scripts in advance," Finnerman recalls. "One script was a love story. I said we should use warm tones to symbolize love, because color affects people psychologically, the same way music does. Another story occurred on a villainous, nefarious planet. It needed cold colors that chill your heart."

Roddenberry told him to shoot a small test, and director Joe Sargent was equally encouraging. Finnerman wanted to put some 10Ks up high, and cut gels for different color themes. He planned to have scoops shooting light up from below, which would allow him to blend different colors. A colored light was aimed at the cyc, and costumed actors placed before it for the test shot. The filmmakers liked the results, and three days later, one of the heads of production at Desilu came onto the set with an $800-a-week contract.

With that test shot Finnerman began to establish a *Star Trek* look. It wasn't uncommon for him to use an 18mm lens, and occasionally a 9mm lens, to

create a feeling of depth. More typically, he used 24mm and 28mm lenses.

"We used forced perspective," he remembers. "If we kept the camera down low, with a wide-angle lens, we could put a fake rock or two in the foreground and make them look tremendously large. We also added colored gels to the lights, which helped to define the mood on different planets."

Finnerman was shooting with a Mitchell BNC camera, mainly with prime lenses, and recalls using a zoom lens only twice. The film he was using, Eastman color negative 5251 with an exposure index of 50, "was slow, but it had wonderful saturation and a lot of latitude," he recalls. "I shot a series of tests to see where my printing lights were. I ended up pushing the film about a half a stop."

Finnerman recalls that he used 150 footcandles of keylight, which, combined with the authentically woollen costumes the actors wore in 1966, didn't take long to overheat both makeup and actors.

The situation was a Catch-22 for Finnerman. At f2.3, the images didn't have the definition needed to maintain a feeling of depth: ideally, he needed a lens stop of f2.8 or 4. But that would have required raising the level of light to 200 to 300 footcandles, which would have had cast members fainting left and right.

Finnerman, who describes himself as "a knickknacker," was not a a fan of flat lighting, and on *Star Trek*, which was shot on relatively large sets with an ensemble cast, he used crosslight before it was in vogue. It was never as simple as putting up a 10K and using scrims to reduce intensity. He usually worked with two or three crosslights, precisely placed, while keeping the intensity as low as possible and giving the assistant cameraman enough of a stop to carry splits.

Having been one himself, Finnerman understood what the assistant was up against. That's one reason he used wide-angle lenses: if he had a 24mm or 28mm lens on the camera, Finnerman knew that the assistant had a fairly decent shot at carrying a split without causing either the foreground or background to go soft. That sort of technique was counterculture thinking for television production in 1966.

"I did a lot of little things," says Finnerman. "I would put most of the light on the person in the background. Your eye always goes to the place that is brightest. If you have two people talking, and you play the person in the foreground down in lighting, your eye goes to the person in the background, and they both look sharp."

Finnerman still has a number of letters he received from Roddenberry during this period. One, dated May 31, 1966, reads: "Dear Gerry, I am very pleased with the job you are doing and with your people and their work. I've heard you make three or four suggestions to the director, [and they were] all well-taken, constructive and highly practical. This kind of creative thinking from your corner will make for a unity between episodes and guarantee that we get them done on time. Keep up the good work."

"Those letters were wonderful," Finnerman says. "I would read them to the crew, and it kept their spirits up. His kindness permeated throughout the crew. He was never negative. If there was something wrong, he would come to me and say, 'You know, maybe next time you might think of something and approach it a little differently.'"

Star Trek, then as now, was filmed entirely on sets, and in the early days, Finnerman says, there was an amazing amount of jerryrigging.

"We had wind and rain scenes, and would invent lightning effects," he says. "We didn't have a lightning machine in those days. I'd take an arc and reverse polarity. When you do that, every time you press the striker down you get a flashing effect. I knew I was going to burn the arc up, and the electrical department would go crazy. But I thought it was worth it artistically.

"Usually, when we did things like that, it was impromptu." Originally, he recalls, the transporter room effects were to be done using dissolves. "The characters would just appear and disappear," he says, "and I thought, 'This is pretty insipid.' What would be indigenous to this show was some type of lighting effect, so I had them drill three or four or five holes in the floor. We put lights underneath, and then I did the same on the top.

"It occurred to me when we shot it for the first time that I should have said something. I hadn't discussed it with Gene, and I probably should have. But when he saw it, he asked, 'How the hell did you do that?'

"I had a lot to learn, and believe me, I learned every day. When we filmed our part of the two-hour *Menagerie* episode, I shot a whole day of process scenes, used as flashbacks. I shot it without putting the correction filter on the arc for the projection machine, and when I looked at it, it seemed a little cold. I couldn't figure it out. What I hadn't done was put a yellow carbon in the arc to correct for the Kelvin.

"The next day when I went to dailies, we were looking at the flashbacks based on the original pilot. The people were normally lit, but the pilot was absolutely blue. I'm sitting there shuddering, and thinking, 'Well, this is the last day of my three-year contract.'"

Finnerman recalls, however, that Roddenberry turned to him at that moment and asked how he got such a marvelous effect!

"I said, 'I don't want to go into the details.' Sometimes

you can look like a fool, but other times they think you're some kind of genius," Finnerman says.

Rush notes that the blessing and curse of *Star Trek* is that it can't look like other television programs. "I've screened shows that Gerry shot in 1966, and compared them to other programs. It had a very distinctive, very different look, and it was better because of the difference," Rush says. "The colors were wild. It was a snapshot of the times with a futuristic twist. I think for a lot of reasons it became an icon. One of them is the fact that the stories had a moralistic point of view.

"There was one show that Gerry did with Frank Gorshin, where his skin was half-white and half-black, and he hated the people who were half-black and half-white. It didn't take a rocket scientist to figure it out, but it was considered daring. I hope the continuing work that we're doing is as relevant. That's for someone else to judge. If it illuminates issues, and makes people think, then we are doing something that might still be around in 25 to 30 years."

While Roddenberry was dealing with themes that were decades ahead of contemporary thinking, Finnerman was inventing new ways of shooting film for TV. *Star Trek* was one of the first shows with natural-looking source light, for which he caught a fair amount of flack from the network. He was told that his lighting should be flat and that the key-to-fill ratio should never be more than 2:1.

"I would shoot with a six- or seven-to-one lighting ratio most of the time, and every lamp we hung was used for crosslighting," he recalls. "I was even lighting with a ten-to-one ratio, and it held."

"They also believed that you should never put color on people or anywhere else," he adds. "I remember one chief engineer getting absolutely livid. It's funny now, but I was only 32 years old, and it was my first job as a cinematographer. We were sitting in the projection room and he said, 'Look at the color of that man's hair, it's red. You're doing everything you shouldn't be doing.' I'd put color on the cyc to warm something up. He said it was unacceptable, but Gene stood up for me and said he liked it."

Finnerman's strongest influences were Burnett Guffey, ASC, an Academy Award-winner for *Bonnie and Clyde* and *From Here to Eternity,* and Stradling, whose Oscar-winning work on *The Picture of Dorian Gray* Finnerman especially admires.

"Harry once told me, 'When you take the lights around so far that it scares people, or it scares you, that's when it looks good,' and that's what I used to do. I used to take that light way around until I got scared, and then it had dimension. That's what *Star Trek* had: dimension. It wasn't only the colors and the gimmicks, and the shaking of the camera and the ship and the lighting, because basically we didn't have a lot of effects, except for the standard wind machine and the rain machines.

"I think much of the look also came from the placement of lights and the use of colored gels. We also saved the company a lot of money, since they didn't have to paint sets to make them look different. We painted them with light. We changed walls from gray to blue to green, depending on the mood and what we wanted to say about that planet. One day we created a purple sky. Another day, the same set looked like a hot desert in March. A third day, it was deep blue. We did it with filters and lights.

"My father use to tell me about Josef von Sternberg, who prior to becoming a great director was a cinematographer. He wanted all white sets. Then he would come in and paint them with light. That was in the days of black & white, and it was a process of cutting off the light, dropping it by degrees with the use of scrims. When he had finished, he had taken a pure white set and turned it into a magnificent three-dimensional look. I took that approach on *Star Trek.* I wanted all my sets painted white, and then I would play with them, knocking off as much light as I wanted and adding colors. We did it in six days per show, and we always made our schedule."

In order to make the ship's bridge, the hub of the TV show's action, believable, Finnerman took advantage of the set's design features. "The set was 240 degrees," says Finnerman. "You could see everything, so there was no place to hide lights except in the front, which meant that everything would have been flatly lit. The redeeming feature was that the set went straight up, like a chimney. I kept looking at that [overhead] opening. There was nothing in there, and I thought, 'If I could drop something through that hole in the center, because you never see it, I could put some kind of lights up there.' I could crosslight the set, and just use front key for ambiance. It was soft light like Marvin uses today. I went to my key grip and said, 'I have an idea, but I don't know if it will work. It will probably look funny, but can you build me something like an octagon that I can drop through the roof, just out of frame? I want four lights on the bottom that I can point in different directions. It could be a piece of metal with eight arms coming out. Four on top, and four on the bottom.' It looked like an octopus. From that angle, I was able to crosslight Kirk, Spock, Lt. Uhura and the others. It gave me backlight and dimension, and that really saved me. I tried to cut down as much as I could on frontlight, and that worked out very well."

Finnerman considered it his job to help draw the audience into listening to the shows' dialogue, which continues to be the core of all *Star Trek* stories, on film or television. "Gene Roddenberry wrote wonderful

dialogue," says Finnerman, "and all of the actors had stage experience. That helped. They delivered their lines in ways that locked the audience into their faces."

Rush enjoyed a similarly talented cast in *Star Trek: The Next Generation*. Patrick Stewart, who portrays Captain Jean-Luc Picard, was with the Royal Shakespeare Company for over 20 years. "Captain Picard's character is memorable, and it's rooted in [Stewart's] theatrical background. Brent Spiner, who plays Data, also has a theater background. I think there's a certain amount of reality of character that you get from actors who come from the stage. That isn't to say that you can't get there another way, but it starts with that background."

In the early days, Finnerman shot with Mitchell cameras, which are big and heavy by today's standards. But he always kept the cameras moving. "That's another advantage of crosslighting," he notes. "It throws shadows from sound booms off the set. We could make 90-degree turns in any direction.

"I was always pushing directors to go a little further," he says. "I'd say, 'On this two-shot, when Kirk walks away from McCoy, we can dolly over and take him over to the bridge.' They weren't comfortable with that. I liked to see a scene flow for three or four pages rather than shoot a straight master and then break it into close-ups."

"So many things you say ring true today," Rush says to Finnerman. "We are still moving the camera and using crosslight. We still push in on a tight close-up during weighty moments when something significant is happening. The techniques you used are still going strong."

Rush's *Star Trek* voyage began when he was working at Paramount, shooting the sitcom *Dear John*. His only single-camera film credit was *Frank's Place*, a critically acclaimed comedy se-

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ries. Tim Reid, the star of that show, asked him to shoot a pilot for a one-hour drama called *Snoops*. Immediately afterwards, Rush was invited to interview for *The Next Generation*. Ed Brown, the original cinematographer, was leaving the show. Rush was interviewed by producers David Livingston and Rick Berman, both of whom were fans of the distinctive-looking *Frank's Place*.

"Much of the credit [for *Frank's Place*] belongs to Bill Fraker [ASC,] who filmed the pilot," Rush says. "I did my best to copy the look he established. That was no small feat, because he's a terrific cinematographer. In any event, they were fans of the show. They remembered episodes and things that I had done with lighting."

Star Trek was, in more ways than one, a whole new universe for Rush. On *Frank's Place*, he typically shot five pages per day. On *The Next Generation*, he was shooting eight to nine pages daily, and the workload included digital compositing and other effects, many of which were new to him.

"I had done some minor optical work here and there, including split-screens," Rush says. "I knew a little about bluescreen, but that was about it. I was starting with a new crew and producers I didn't know. I'd known Hugh Wilson, the executive producer of *Frank's Place*, for 10 years. When you know the producer and the crew, you have tremendous creative freedom.

"I remember the first *Star Trek* episode I shot, 'The Ensigns of Command.' Stage 16 was our swing set stage. It's the biggest stage on Paramount's lot, and the set covered every square inch. It was a giant village. It was immense, and it had integral interiors. [Cinematographer] George LaFontaine [with whom he had worked as an operator] told me once that sometimes big sets are easier to light, but it was still intimidating."

Finnerman recalled having the same discussion with Stradling some 30 years ago, when he was lighting the Covent Garden set for *My Fair Lady*. Finnerman asked how Stradling was going to handle that big set. "Harry said, 'The bigger the set, the easier it is to light. Just watch.' He started in the back and worked his way forward."

"My philosophy of lighting is to look for the source," says Rush. "I try to figure out where the light is coming from, and what the logic is. Usually it is obvious, unless you're on a planet where there is more than one sun. George LaFontaine also taught me that when I shoot daylight exteriors on a soundstage I should put the sun in the worst possible place — the most unattractive, most uncomplimentary place — and then work hard to fix it. The idea is that when you are on location, you can't put the sun where you want it to be. I don't always follow that philosophy. But you don't put it behind the camera -- instead, I use a three-quarter raking backlight, or half-light, or maybe even dead backlight, if you want it to look like real sunlight.

"It's the same with interior light sources," Rush continues. "I figure out where the sources are, and play them so the scene is believable. I really hate seeing more than one shadow on a wall. I try to get directors to stage action away from walls. The further they stay away, the easier it is to keep shadows from dancing on the walls. I tell them it will look better, because there will be more depth in the scene, and I can make the actors look better. Most of the time that's a successful technique. There are times when someone has to be up against a wall for a story point, or because of the nature of the room. In that case, I light for one shadow."

Rush marvels at Finnerman's work with 50-speed film. "We're shooting with a 500-speed film. The 5296 film changes the equation. I can light a big room with a 10K and a bounce card, and pull a deep stop. I can use a 12 x 12 griflon that gives me a base level of fill light that is essentially shadowless. When I put a crosslight in for key, I've got a single source. That just wasn't technically feasible when you did the original show."

Finnerman observes that many sets on the new *Star Trek* series are self-contained, with overhead and side lighting. "The high-speed film is such an advantage, because you can create a much more natural look," he says. "There was no way our sets could be self-contained with a 50-speed film. Today, you can light entire sets by bouncing ambient lights off walls."

Rush uses two approaches to designing light into sets. One is to put neutral density filters on them until they are nothing more than accent lights. The other is to allow them to become part of the base light. When an actor moves close to one of these lights, it is used as a source for motivating crosslight hidden just out of frame.

Rush notes that the look of the bridge set for the Enterprise was fixed before he came onboard *The Next Generation*. Referring to Finnerman's comments about the bridge set on the original show, Rush says, "They did the same thing on my show. They built a complete [muslin] dome over the set. There was no provision for any lighting other than the ambient light coming through the muslin. Putting lights beside the camera was totally unacceptable to me. Instead, we built some boards that could be clamped into the ceiling and created a lighting grid for the captain's chair.

"To my knowledge, the dome had never been photographed. It was supposed to be an observation window. You looked straight up and saw a star field on the other side. But no director ever made use of it; no actor ever looked at the stars through this window. We took

the plastic window out and put a lighting grid in its place. It was very small. We didn't call it an octagon, but it did exactly the same job.

"Your bridge had an elevated area with a second deck," Rush continues. "We had the same situation. The problem was how to put in light without having big shadows plastered on the back wall, which was made of plexiglass. It was a mirror-like surface."

Finnerman nods in agreement. "Basically we think alike," he says. "Another cameraman might have walked onto the original *Star Trek* set or onto the *Deep Space Nine* set and said, 'This is the way it is, and I have to live with it.' Our inclination was to say, 'Let's make it better. We can fix it.'"

Rush is reminded of a sequence involving removable panels on the back wall of the bridge set, designed to allow the crew to take reverse shots of the cast. (The set also has permanent side panels.) For one episode, the director wanted to stage a shot in front of one of those panels, but Rush knew the camera would be unacceptably close to the actress. He didn't want to use a 24mm lens for a close-up in this particular situation, because he knew the results would be inappropriate. But the director didn't see it that way, so Rush asked his key grip to cut a hole in a panel wall to provide a better vantage point for the lens.

"We have a hotline to the office," he admits. "I could have called, but I didn't want to take a chance on someone saying no, so we took the initiative."

Finnerman interjects his belief that Roddenberry would have approved. "I made a lot of artistic decisions without sharing too much information in advance," he says. "Otherwise, I'd have ended up playing it safe. On a show like *Star Trek*, you have to push the envelope. The result of playing it safe is a diet of pabulum."

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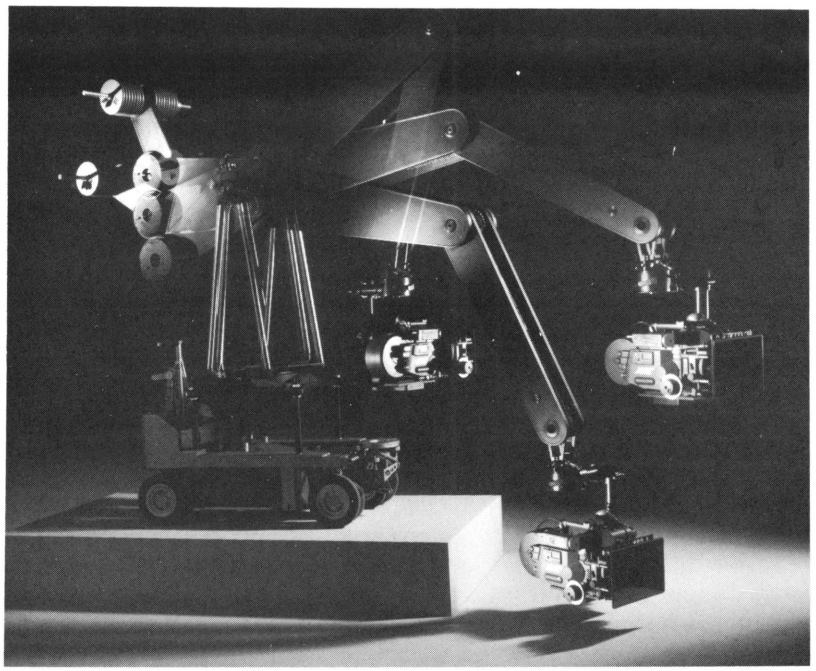

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The two cinematographers also share the experience of filming elaborate alien faces. "We used to have trouble sometimes with prostheses," says Finnerman. "They tended to absorb light, whereas a face reflects light. My eye could pretty well tell me it wasn't going to look good. You would put a light on it, and it would go blue or green. I found a trick. I bounced light through a reflector, which made it softer. I also added a little diffusion and netting to smooth a prosthesis out, so you really wouldn't know what it was."

Rush can report progress in that arena: "Michael Westmore is our chief makeup man, and he has earned several Academy Awards and several Emmys for his work. The technology for putting makeup on appliances has gotten a lot more sophisticated. We use the same surgical adhesives that doctors use to stick tissues together. They are remarkably sticky, and a tiny bit will hold on firmly. You (Finnerman) also had to use a lot more light, with higher temperatures, and that tends to make people perspire. One of the things we do is to keep the stages air-conditioned to a pretty good level. There are a lot fewer problems with prosthetics coming off. We also use diffusion. Last year we had a real problem. In fact, I talked with Gerry about it. I was having problems with Odo, a character on *Deep Space Nine.* Gerry suggested that I try some particular nets. I had used nets in the past, but it was amazing how much better it was. It got rid of those lines a lot better than the diffusion I had been using."

Rush, who had followed Finnerman's work for years prior to meeting him, also cites Leonard South, ASC as a mentor. "I did *Foley Square,* my last show as an operator, with Lenny. He taught me a lot. I always prided myself on composition, but if an actor moved, I'd move the camera to correspond with his movement.

"One day Lenny said, 'You're doing a good job for me, but you need to learn to let the actor move in the frame a little more. If you did what you're doing on the big screen, you'd knock the audience right out of their chairs.' It really surprised me because I'd been doing this for a while, and I thought I knew what I was doing. But Lenny operated the camera on all of those Alfred Hitchcock movies, before he became a cinematographer, so he really understands the art. I've really taken it to heart. I always tell that to our new B-camera operators. It's a subtle thing, but when you compare two shots side by side shot by two different operators, it's a much more elegant look. That's what Leonard South taught me, and I'll never forget it."

Rush notes that one of the original episodes of *Star Trek* might typically have incorporated eight or nine optical shots, a very ambitious number in the 1960s. A *Deep Space Nine* episode could contain 50 or 60 composites. The two-hour pilot had more than 200, including motion control filmed on stage with actors, and dozens of split-screens and digital composites. The producers also integrated morphing and computer-generated images into the show.

"This use of technology makes it possible for us to do different types of stories," Rush says. "Whole sets can be created without building them. We were able to do a lot of this optically, but now it's quicker and more seamless."

"I'll tell you how far [effects work] has come," says Finnerman. "On the original series, there was an episode with a split-screen, where I exposed half of each frame with Shatner, and used a black show card to cover up the other side of the frame. Then I rewound the film, put it back in the same camera, and shot the other side of the split-screen. George Méliès used that technique in 1900. We pulled it out of the air and hoped it would work."

Another major difference between the production of the two shows is dailies. When Finnerman was shooting *Star Trek,* dailies were on film, and they were only open to Finnerman, the producer and the director. The new *Star Trek* shows have open video dailies to which everyone is welcome. The only restriction is that everyone must watch the same TV monitor, in the same room, so that they see the same images.

What hasn't changed, Rush points out, is that the characters are wearing funny outfits, talking about places that don't exist, and shooting silent guns that don't have any recoil. There is a very fine line between creating a new reality and seeming silly, he says.

"What's happening in front of the camera must seem absolutely real to the audience. The people who speak the lines must absolutely believe what they say. They have to make the audience believe that there really is a place called Argon Nine, and that the characters have been there.

"Whenever possible, sets are built in 360 degrees. There are no three- or four-wall sets. Instead, there are six-wall sets, including the floor and ceiling. Everything is shootable in any direction. If a director wants to do a 360-degree dolly, it's no problem. He can show the audience the ceiling and the floor to help develop a sense of place." The trick, Rush says, is to design the base light into the sets. That way, he doesn't have to light every shot from black.

"We put a ceiling grid with 8K soft lights (on the Promenade set)," he says. "The light went through muslin. We built some other grids with color-balanced fluorescent tubes. The 8Ks were divided into circuits. That allowed us to divide the Promenade into sectors. They were all on a computer dimmer board

handled by the gaffer. I told him what I wanted, and he did it. The point is that these panels could be photographed. They were a part of the set, and they contributed to the ambience. The main lighting units were generally just at the edge of the frame, two or three degrees away. With this lighting structure, we could freely have 360 degrees of coverage."

As Finnerman had on the original show, Rush designed a signature look for key characters in the new *Star Trek* films. For example, Worf, the Klingon security chief played by Michael Dorn, has incredibly deep-set eyes.

"He typically stood as far back in the Enterprise bridge as you could possibly go, and he has a dark complexion," Rush says. "The android, Data, has a yellow face, which was about a stop overexposed when he stood in a shadow. That was a tough combination for any two-shot. I used a 4K softlight with a long snoot for Worf. We called it the 'Worf light.' It sat on a pie plate on the floor, and it basically came up to the eyeline. It was well below the lens, because if you put it on even with the lens, and Michael lowered his head at all, his eyes would go completely to black. We used a net on Data, about a single's worth, to bring him into harmony with the rest of the set."

"I use the same technique on Benjamin Sisko, the captain on *Deep Space Nine*, that I had on Picard," he continues. "We set the key in such a way that wherever he turns, it catches just the socket of the downstage eye. It lights half the face and the bridge of the nose catches just the eye socket. I didn't invent it, but it's something I use very often on those characters. It's difficult to explain, but it feels and looks right."

Another Rush contribution to the look of the new shows *Star Trek* shows is darker set walls. He explains that if you have darker walls to begin with, they don't tend to reflect as much

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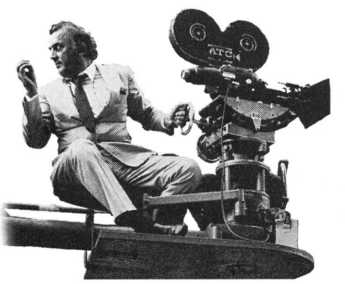

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of the bounce fill light he uses. This allows him to fill with ambient bounce light without using scrims and flags to tone down bright walls, which in itself creates more contrast.

On *The Next Generation,* Rush made occasional use of half-light. On *Deep Space Nine,* he started keying with half-light when he designed his approach to filming the show. He used half-light on faces, sometimes in combination with an eye light he calls a "hot dot." The "hot dot" technique combines a bounce card with a small light, usually a tweenie. He positions it low and behind the camera. "I'm not a big fan of Obie lights," he says. "They can get too bright if the actors get too close. If they are a few feet away, they are too dark. We do the same thing with a bounce card and a light. Even if someone is too far away, there are generally no exposure problems. That's because of the way light works: the further you back off, the smoother it gets. That doesn't work for a dolly shot, and for that reason sometimes we use an Obie. But generally, we create eye light with a fluorescent that we can mount on the back of a magazine. It's right over the top of the operator's head, and it shines on both sides of the magazine. It has a dimmable fluorescent valve built by my gaffer."

Rush says that he got lucky on *Deep Space Nine:* the cast had some difficult faces to photograph, but there were also many faces that can take light from a variety of angles and still look good. "The cast you work with, and their faces, determines to a large extent what you can and can't do, certainly for close-ups. I usually give the actor something to look at when we are staging a scene. For example, if there's dialogue, and we are coming for a close-up on one actor, I'll ask the other one to lock in on the eyeline. I'll show them where it is, and bang, they'll come right to it.

"I tell them, 'If you come right to this point here, your face will light up in a way that will really reach out to people. If you go past it, it won't work."

Finnerman comments, "That's very interesting. When I was doing *Star Trek,* I used classic black & white lighting techniques. Today, lighting styles have changed considerably. It's much more of a natural source look. I find myself doing things today, like bringing light into a face at a lower angle, that I wouldn't have done then."

Ask Rush about the keylight level he used on *Deep Space Nine* last season, and he'll tell you he doesn't read footcandles very often. He thinks in terms of stops. He rates the 5296 at an exposure index of 400, about a quarter-stop overexposed. The lens stop is generally around T3 to 3.2. He estimates that his keylight is 30 to 35 footcandles. That provides some frame of reference when you compare it to the first *Star Trek* shows.

Rush notes that the bounce light he tends to use requires more wattage, and one of his tricks to keep the stages cool is to use a tiny piece of foam core or show card stapled up in a corner. He puts an Inky on a pie plate, on a riser, and shoots the beam into the foam core. The result is sufficient to light a little corner of a set.

"That option wasn't available to you," he says to Finnerman. "You simply couldn't approach a little hidden corner the same way that I can. I can tuck lights into small little areas, and they do a lot of work.

"Probably a lot of cameramen don't use fluorescents as much as I do," Rush continues. "We have rigged all kinds of fluorescents in various sizes, from tiny luminaries to big eight-footers. I also use quartz light, and just about everything Mole Richardson makes.

"There is so much more flexibility today," he says. "Backlighting is a lot simpler. Before, you had to hang a junior fairly high up. It's pretty bulky, and it had to be supported. It stuck out from the wall a ways, and it had a set of barn doors. Today, I can take a little piece of foam core, about four inches long, staple a six-foot fluorescent tube against the wall, angle the bracket in the right direction, and I've got seamless backlight."

What was it that made *Star Trek* so special that it is more popular than ever some 30 years later? The richness of the concept, the synergy between the characters, and the remarkably imaginative stories conceived by Roddenberry are a major part of the success, but Finnerman believes there is more to it. "We think visually, and that's synonymous with the magic of *Star Trek,*" he says. "Images augment the words likes pieces of a puzzle."

Rush adds, "I couldn't agree more. I don't think anyone can explain the magic of *Star Trek.* It's a small miracle."

"Having the privilege of working on this show has made me think a lot about the future. I'm sure that Gerry had no idea that people would be watching his shows 25 to 30 years after he shot them. It is a real tribute to him that they have stood up so well. I hope what I'm doing now will be aired for 25 or 30 years. I always think, 'I'd better do a good job, because if it's horrible, I'm going to be looking at it for 30 years.' It's important not to think of this work as a disposable television show."

"It's funny," says Finnerman, "I've been very fortunate. I shot some very good features. I have 10 Emmy nominations, and I won once for *Ziegfeld.* Sometimes, people ask me about *Moonlighting,* but usually it's *Star Trek.* I still get letters about *Star Trek.* That's what people remember."

Ali Baba and the Forty Thieves:
A Romantic Fantasy in the Sand

1944 Technicolor adventure mixes musical theater and melodrama.

by Richard J. Schmidt

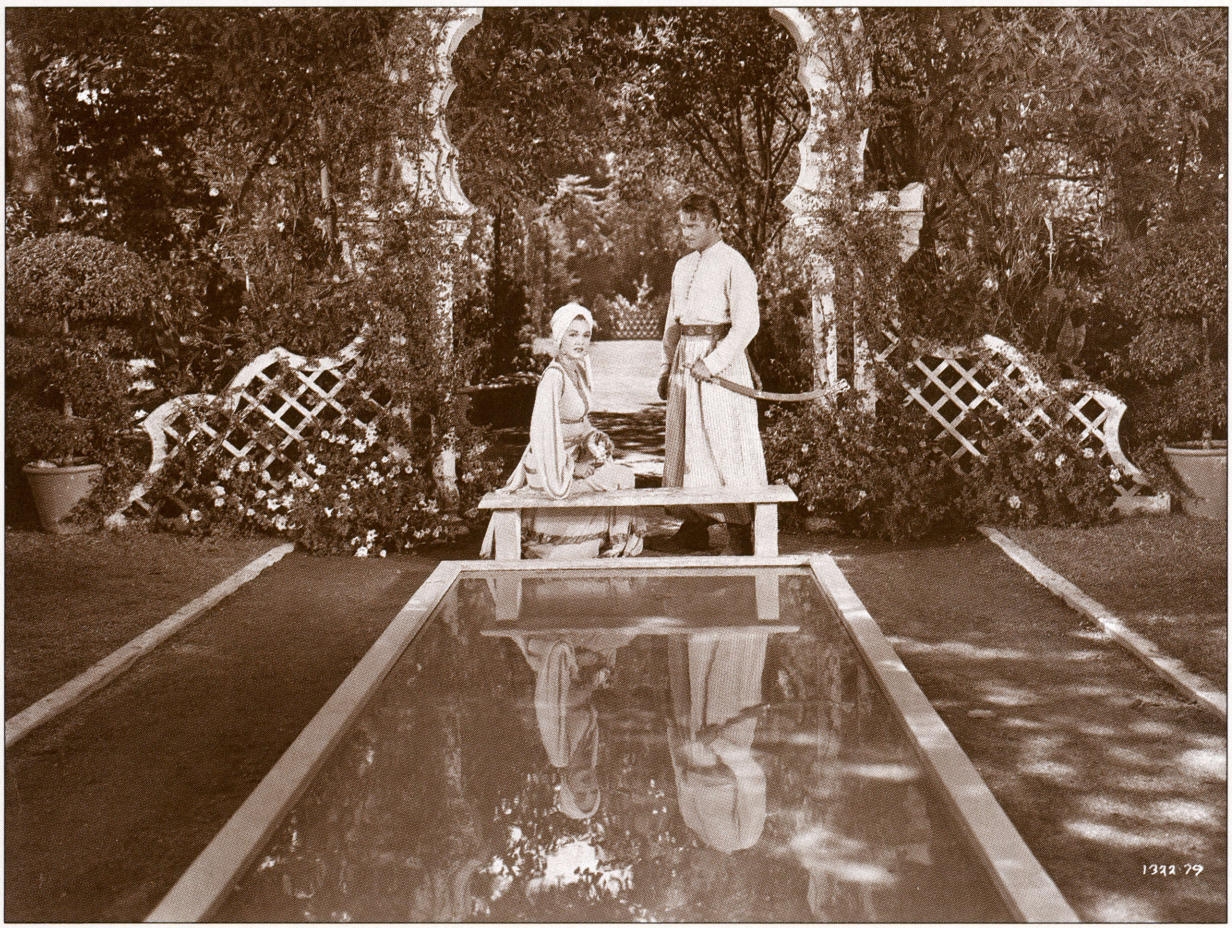
After the success of the 1942 *Arabian Nights*, a Walter Wanger production which was also the first full Technicolor Universal feature (1930's *King of Jazz* was two-tone Technicolor), Universal Pictures conceived a quasi-sequel using many of the same elements of the earlier film, including the potent force of stars Maria Montez and Jon Hall. This was to be another classic public-domain story, *Ali Baba and the Forty Thieves.*

Sons of the sun.
Forty and one for all;
All for one.

— Riding Song of the Forty Thieves

Before *Arabian Nights* was even completed and earning money, Universal producer George Wagner, realizing what a hot team the studio had with Montez and Hall, announced on July 27, 1942 that he had two additional projects for them: *White Savage* and *Cobra Woman*. Both films were eventually made, although *Ali Baba* — which was actually produced before *Cobra Woman* — was not put on the production schedule until 1943.

Clearly, three of what became the six-film Hall/Montez "series" took inspiration directly from the 1940 *Thief of Bagdad*, produced by Alexander Korda and filmed in Europe and the United States. How-



***Princess Amara (Maria Montez) and Ali (Jon Hall) in one of the quieter moments of* Ali Baba.**

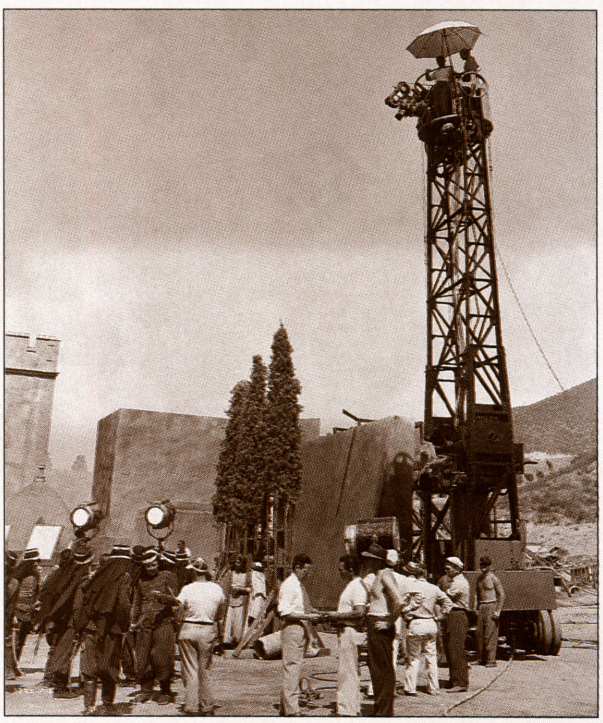
Above: ***The dhows (river boats) of Caliph Hassan await at the estate of Prince Cassim. The boats are ready to take the fleeing Caliph to Basra, but instead he is murdered by Mongols directed by the traitorous Cassim. On the hill are "Incan ruins" from*** **Green Hell.** **Below right:** ***"Bagdad" on the Universal backlot. The crew is using the unique Broadway Crane, which swings in all directions and is controlled from the camera cab. Extras playing "Mongols" and "citizens of Bagdad" await their cues; in the foreground, art director Richard H. Reidel consults with prop man "Blackie" Rosenkrantz.***

ever, these three Universal films, *Arabian Nights* (1942), *Ali Baba and the Forty Thieves* (1944) and *Sudan* (1945), became not just wholesome, *Thief*-like Arabic adventures, but sand-and-sex fantasies — melodramas that went beyond the childlike approach embraced by *Thief* and forged a more "adult" slant in their stories, while unashamedly cashing in, of course, on *Thief*'s appeal. Some of what were deemed to be successful elements of *Thief* would be copied for the Universal films — the bravura music, the dynamic costumes, the youthful and attractive performers. The filmmakers would also exploit the glories of Technicolor, which was thought to be a valuable commodity for this type of fantasy despite the added expense of time and money. Universal and executive producer Jack J. Gross wanted these same ingredients.

But they also wanted something different. *Ali Baba and the Forty Thieves* owes as much to the 1926 Sigmund Romberg musical *The Desert Song* as it does to Valentino, *Arabian Nights*, or even Alexander Korda. Much of the film revels in a light-opera tone — both dramatically and musically. Certainly the "Riding Song of the Forty Thieves," a sort of baritone fight march sung by a chorus of 41, flows right out of this kind of theater; the "Riff Song" from *Desert Song* is nearly identical in spirit and tempo to the "Riding Song," and it serves the same general purpose. The male chorus typified operetta; it had become a kind of musical shorthand that dramatized affection among men and heightened the force of male groups. Yet in 1943, non-musical films like this one didn't include male choruses. Though choruses were used occasionally in the Thirties in such films as *Captain Blood* and *Mutiny on the Bounty*, by the war years films took on more "realism," and this anachronistic tidbit had been pretty well discarded. *Ali Baba* uses it because it reflects a romantic tradition — a return to a simpler form, a theatrical throwback to a type of drama in which the appearance of a song mirrored feeling and relationship. So too, the drama of this film demonstrates other theatrical conventions, such as colorful and stagey dialogue ("Yea" and "nay" are spoken seriously here), archetypal characters, and melodramatic conflicts. These conventions hardly represented reality in 1943, but of course that was the point.

A budget of $554,000 was allotted for the new project, including $7,300 for the original screenplay. The script was written by Edmund L. Hartmann (b. 1911) who had previously penned a number of other Universal properties, including *Sherlock Holmes and the Secret Weapon*. He melded historical elements of the Middle East with his primary source book, *A Thousand and One Nights*, keeping in line with the wishes of producers Robert Arthur and Paul Malvern, both fixtures in B-movie production. Hartmann's May 25, 1943 version became the original "white" shooting script.

Like all the color Universals of the early to mid-Forties, this film opens without the familiar plexiglass globe of the Universal logo. It had been filmed only in black & white and its inclusion in these films would require a whole new setup which the budget-conscious Universal executives did not need for the relatively few Technicolor films on their schedule. The opening credits of *Ali Baba and the Forty Thieves* do hark back to an introductory device familiar from the early Thirties — that of actually showing the principal actors with their



Director Arthur Lubin (in checked shirt) and cameraman George Robinson line up a particularly opulent scene in the throne room of the Mongol Khan (Kurt Katch). To Khan's left are his betrothed (Maria Montez) and Prince Cassim (Frank Puglia).

names. This technique had long faded from view with all of the studios, though Universal used it selectively from time to time (as in 1941's *The Wolf Man*).

Ali Baba and the Forty Thieves grounds itself in possible, though improbable, events. Almost no magic occurs here — no flying carpets, no intonations that change the weather, no genies. This "real-life" approach reflects Universal's plan to make a more adult fantasy than *Thief of Bagdad*. Still, nobody involved in the production thought of it as realistic, and Universal's press releases even used the word "escapist." But the level of reality is different in *Ali Baba* than it was in *Thief*, and not just in its degree of far-out fantasy. Sexual and romantic tension abounds here, well beyond the level evidenced in *Thief*. "I know the ways of mischief," Jon Hall says about a third of the way through the movie, and clearly he does. June Duprez was not intended to be particularly alluring, but Maria Montez definitely is. The film was made for adult romantics, the same audience that might attend any traditional operetta. And this, of course, is seen as its fatal flaw today. While we remember *Thief* with fondness and nostalgia, we view *Ali Baba* as "camp."

Construction of the sets came under the direction of associate art director Richard H. Riedel. The chief of the art department, and the primary credited art director for this film, was John B. Goodman, but in the Universal of those days, the associate (or unit art director) assigned to each film actually planned the look of the picture. That was Riedel. Fellow Universal art director Martin Obzina (1892-1991) explains the workings of the department:

"They'd have a meeting; the producers, the director, all of them. And then the director or producer or Goodman would say, 'This one would be good for Martin.' And then they would come to you. It was your picture. If it was a picture that I liked, I'd work 24 hours a day.

"You'd make sketches, hundreds of them. You started with people, faces, expressions, odd things about them. You would do buildings, exteriors, interiors. Then you'd get Goodman's signature. He was just a signature; he wasn't much of an art director. . . see, you have to have imagination. And then I would turn [the sketches] over to the head of the drafting department, and I'd say, 'Who would be best for working on this?' And then I'd come back at about eight or nine the next day and

Above: ***Young Ali (Scotty Beckett) bests Abdullah (Andy Devine) in swordplay. Kneeling at left is Chris-Pin Martin. The man leaning on his knee is the magician John Calvert, and standing behind Ali are Baba (Fortunio Bonanova), Pedro Regas and Ethan Laidlaw.*** **Right:** ***Ali and Abdullah realize that old Baba is dying.***

look at them, make sure there were enough entrances and exits. . ."

Reidel designed a wonderful and colorful array of spacious palace interiors, reflecting pools, and cool gardens. Palaces had a slightly East Indian flavor, with high domes and bright whites. Governmental restrictions on set construction due to war-imposed material shortages limited the amount of money for new sets to $5,000, but older sets (some left over from *Arabian Nights*), which were not technically new and thus not subject to the same governmental limitations, were redressed. In addition, glass painting and optical matte work could help maintain a look of opulence while reducing the need for new materials. Total set construction and reconstruction costs amounted to about $53,000.

Vera West, a costumer at Universal since the late Twenties, designed the wardrobe with the vividness required by Technicolor in mind. Her designs, which included Indian saris and turbans mixed with more classic Arab clothing, were executed by Western Costume, and were thus owned and retained by them, not by Universal. Some clothing — especially the women's costumes — had an unambiguous 1940s feel, with clinging bodices and shoulder pads that were not part of the wardrobe of 13th-century Arab women. One look at Montez' handmaiden, the beautiful Ramsay Ames, dressed in slit dresses and platform shoes (and no veils), leaves little doubt that the costumes reflected Hollywood traditions. The 40 thieves themselves became clean and attractive pillagers, and Ali Baba himself is very much a clothes-horse clad in garish reds and blues (actor Jon Hall was allergic to wool, however, and those costumes containing it had to be extensively lined).

Principal photography began on Tuesday, June 29, 1943 at Universal City with Arthur Lubin directing and George Robinson, ASC serving as director of photography.

Lubin (b. 1901), who had finished work on his prior assignment, *The Phantom of the Opera*, in April, was one of the workhorses of Universal during the 1940s and 1950s. For this film, his salary (including $1,000 of overtime pay) was $18,000, with an allowance of $8,000 for "director's staff," which included Lubin's two assistant directors, Charles Gould (also from *The Phantom*) and Jud Cox.

Since *Ali Baba*, like *Phantom*, was to be shot in Technicolor, two other faces were always on the set. According to Arthur Lubin, "[Technicolor] had too many people on the set all the time. There were always two from Technicolor there—the cameraman [W. Howard Greene] and Mrs. Kalmus [wife of the president and VP of the Technicolor corporation]. They took care of the color, the costumes, the sets. . . but it was difficult because it all went to red. . . the sets, the people; it could be terrible. Don't forget, Technicolor was just coming into its own. But we were very pleased to have [it] because it

meant our pictures would make more money."

Lubin was assigned the film and not consulted in the choice. As a house director, he was obligated to take what was handed him after a prescribed rest between pictures. It seems likely that he was given *Ali Baba and the Forty Thieves* because of his success with Technicolor and its people while making *Phantom* and *White Savage* (1943). He thus directed Universal's second, third, and fourth Technicolor films.

(To be continued. In Part II, Jon Hall, Maria Montez and company embark on the production, which entailed scimitar battles, Mongol dance scenes, and a pageant featuring water buffaloes, monkeys and macaws.)

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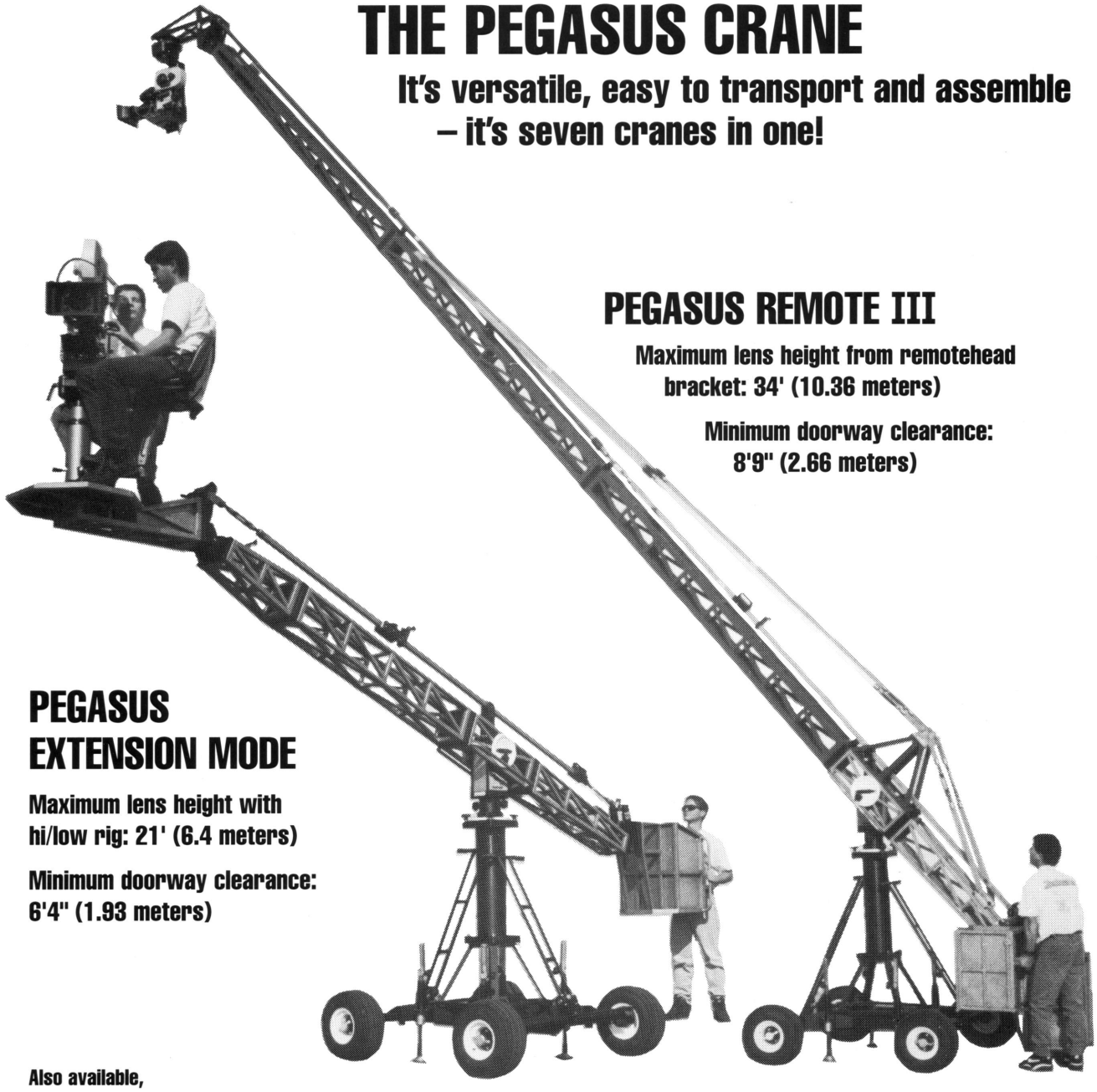

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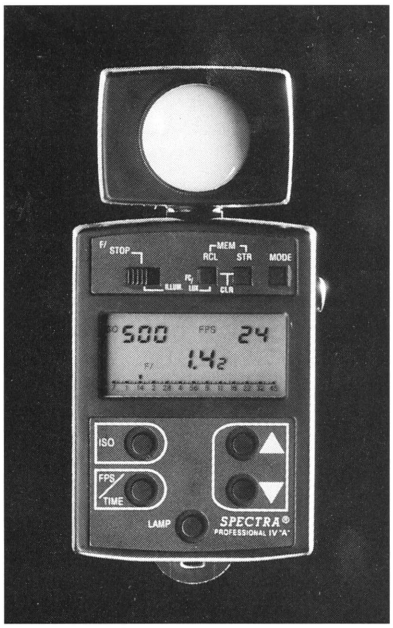

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For information: Spectra Cine, Inc., 820 N. Hollywood Way, Burbank, CA 91505, (818) 954-9222, FAX (818) 954-0016.

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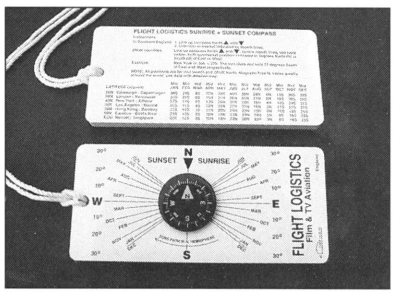
Two optional extension software packages add special functions to the LBX and GSX control systems: Kaleidoscope offers extended special effects and advanced color scroller control, and Communique introduces advanced communications features so that the system can control and be controlled by other lighting desks, computers, MIDI equipment or simple switches and faders.

For information: Strand Lighting, 18111 South Santa Fe Ave., Rancho Dominguez, CA 90221, (310) 637-7500, FAX (310) 632-5519.



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For information: Flight Logistics, Grip House Studios, 5-11 Taunton Road, Greenford, Mddx, England, 081.575.0528, FAX 081.813.1455.

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The unit will also find applications in production houses by allowing the quick transmission of commercials for screening approval. Production companies will be able to screen daily rushes from remote shooting locations. Using an Inmarsat Satphone, this is possible even if the shooting location is in a jungle in Brazil.

For information: Colby Systems Corporation, 2992 Alexis Dr., Palo Alto, CA 94304, (415) 941-9090, FAX (415) 949-1019.

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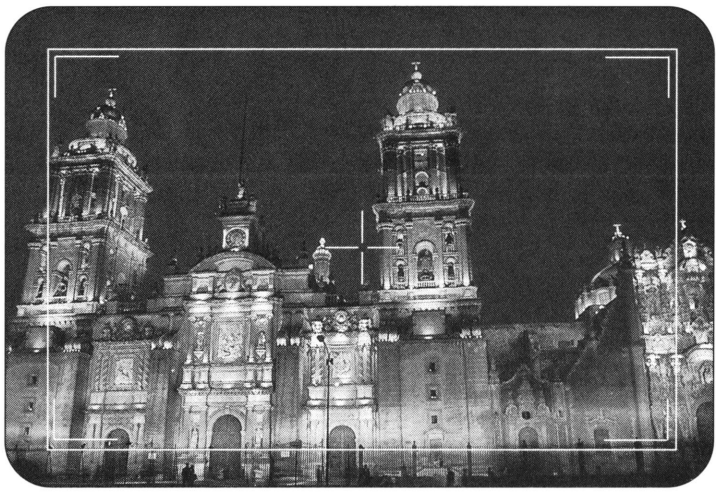

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For information: SKC America, Inc., 850 Clark Dr., Mt. Olive, NJ 07828, (201) 347-7000, FAX (201) 347-7522.

Morph/FX Software for Macs and Windows

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The native Power Mac version renders six times faster than the 680X0 Macintosh versions and enables almost instantaneous color mixing and brightness and contrast control. Image editing adjustments appear virtually in real time. This version also includes a new freehand drawing tool that uses curve-fitting technology to achieve the precision of Bezier curves with the simplicity of natural drawing.

Both the Power Mac and Windows versions offer the Shape-to-Shape interface, which produces higher quality results with less effort than more traditional point-to-point and mesh-based interfaces.

The Windows version features a Guided Entry to walk novice users through the creation of special effects, as well as the TransJammer plug-in transitions generator.

For information: Elastic Reality, 925 Stewart St., Madison, WI 53713, (608) 273-6585.

Time Code Readers for Camcorders

The Easy Reader 1.5 and Easy Reader 2 translate time code into computer data for use with popular computer logging programs such as Avid's MediaLog, Pipeline Digital's AutoLog, and EMC's EMCLOG. The units are housed in a small black box that runs on five AA batteries. Producers can use a Sony Watchman and a laptop to log their footage anywhere. Easy Reader 2 saves 20 to 25% of the time required to enter time code information, log information, and identify the good takes.

EZR-2 reads both LTC and VITC time code out of a camcorder or record VTR during production, translates LTC into VITC, embeds VITC into the picture as it is recorded onto a consumer VTR, and can simultaneously transfer time code information to a PC or Mac.

During the shoot, window dubs can be made with up to four different windows, positioned anywhere on the screen (as a group), and programmed to burn in VITC and/or LTC time code. The four windows are the LTC, VITC, and the user bit windows associated with each. This capability is valuable when using pre-recorded playback while shooting because one of the two time code displays can be the code on the playback deck. This provides an easy visual sync reference for editing. After the shoot, the EZR-2 can be used to take the video signal out of the consumer VTR and deliver VITC to a computer, or even transfer footage directly into the nonlinear editing system.

The Easy Reader 1.5 is a scaled-down version of the EZR-2 for those who wish to feed time code directly to their Macs and PCs but do not require window dubbing capability. EZR-1.5 takes the LTC out of a camcorder or record VTR and converts it to RS-232 for direct input to a laptop PC, or to RS-422 (with the supplied Mac adapter cable) for direct input to a Macintosh Powerbook. It can be used while shooting in the field or in a studio, or in telecine while transferring from film to tape.

For information: Television Ideas and Software, 225 Elizabeth Ave., Hamilton, NJ 08610, (609) 394-4818, FAX (609) 392-6045.

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Cyberware has three new scanning products for scanning and digitally reproducing objects. CyZip, the key element in the design of Cyberware's Whole Body Scanner, is software specifically for building models from multiple scans. CyZip uses the cylindrical scan as a registration onto which the other scans are anchored. Then the software matches the points and adjusts the position of each scan until they are in alignment. The geometric relationship of the various areas can be arbitrary; CyZip will calculate the best alignment. The registration scan is then removed, and the aligned scans are "zippered" together into a continuous mesh that has a greater facility for manipulation.

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The 3030 scanner uses low-intensity laser light to create a lighted profile of an object, which is captured by video sensors from two viewpoints. Thousands of these profiles are digitized in just a few seconds, resulting in an accurate representation of the color and shape of the entire object.

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For information: Cyberware, 8 Harris Court #3D, Monterey, CA 93940, (408) 373-1441, FAX (408) 373-3582.

Offline Editing Instructional Videos

First Light Video Publishing has released a two-volume video series on offline editing, *Offline Editing: An Introduction*, and *Offline Editing: Working with Edit Decision Lists*. The first volume covers the mechanics and strategies of the offline session, from raw footage to

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The second volume guides the viewer through the list management process. Topics include how to read an EDL, linear and nonlinear formats, editing tips to improve list accuracy, cleaning, tracing, and final preparation for the online.

For information: First Light Video Publishing, 8536 Venice Blvd., Los Angeles, CA 90034, (800) 777-1576.

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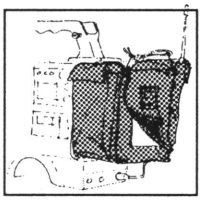

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Montreal	Moli-Flex/White	514-939-1989
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Taipei	Tai Shun Movie Equip.	8862-975-7738
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sors can be closely coupled within the same computer.

In addition to its RealityEngine graphics subsystems, Silicon Graphics will provide an Extreme Graphics option for the Power Onyx and Onyx line. Extreme Graphics provides fast, interactive 3-D graphics and is based on a single graphics board design delivering 600K triangle mesh/second. It features a 24-bit hardware Z buffer, 24-bit color, advanced lighting models, point/line, anti-aliasing, atmospheric effects and software texture mapping.

The Triple Keyboard Option is designed to increase productivity and maximize workstation resources by allowing three separate graphics users with individual keyboards, monitors and mice to share a single Onyx system. This option combines processing, memory and disk resources while simplifying administration, networking and maintenance functions.

Power Onyx systems run the IRIX 6.0 operating system, an enhanced 64-bit version of the System V Release 4 (SVR4) UNIX operating system. IRIX 6.0 takes advantage of a multi-threaded symmetric multiprocessing architecture and offers advanced capabilities to handle floating point-intensive applications. Included are the new MIPSpro compilers, a complete family of optimizing 64-bit compilers providing support for Fortran77, C and C++. Power Onyx also is augmented by a variety of graphics libraries and development environments.

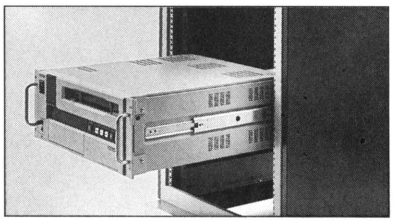
For information: Silicon Graphics, 2011 N. Shoreline Blvd., Mountain View, CA 94043-1389, (415) 390-1306.

Animation Software

Alias Research Inc.'s PowerAnimator Version 6.0 with Alias CharacterBuilder offers tools for creating advanced character animations and a new particle system generator that is fully integrated with the Alias Digital OptiF/X package. CharacterBuilder allows the user to impart life-like behavior to digital characters — smiling, speaking, running, muscle bulging and skin creasing. The software suite provides an intuitive, visual interface for matching a user-defined library of facial expressions to dialogue contained in a digital audio track. Other capabilities include MotionSampler 2 for real-time performance animation with shaded models and a visual dataflow interface for easily integrating external motion data. CharacterBuilder also provides fully integrated, high-level tools for precise control over muscle and skin behavior.

The Digital OptiF/X particle system generator is tightly integrated with the rest of the system, allowing particle systems effects such as fire and smoke to be combined with other 3-D modeling and rendering elements such as explosions, glows, light beams and collisions of particles with animated 3-D models.

For information: Alias Research, Inc., 110 Richmond St. East, Toronto, Ontario, Canada, M5C-1P1, (416) 362-9181, (416) 362-0630.



VTR Rack

The Winsted Corporation is offering a Rack Slide Kit to accommodate Sony's new UVW series of Betacam VTRs. The Model F8806 Rack Slide Kit includes rack handles, slides and hardware needed to rack-mount a UVW series VTR. The kit is designed to hold the VTR securely and allow safe, easy maintenance of equipment. The VTRs pull out easily on heavy-duty ball-bearing slides. Adjustable finger brackets allow rack mounting in slope or vertical racks.

For information: The Winsted Corporation, 10901 Hampshire Ave. South, Minneapolis, MN 554338, (612) 944-9050.

Video System Upgrade

Version 1.3 of the Media 100 online nonlinear video system enables users to create broadcast-quality video programs directly from a Macintosh computer.

Version 1.3 allows Media 100 to operate on the Power Macintosh 8100, and improves on picture quality with new variable digital compression settings: 65Kb, 70Kb, and 75Kb/frame for the Power Macintosh, Quadra 800 and 840av user platforms. The Quadra 950 will support compression settings up to 60Kb/frame.

A new QuickTime audio export feature allows users to export both QuickTime video and audio files from Media 100 to QuickTime applications such as Adobe Premiere and AfterEffects. The version 1.3 update to the Media 100 FX Option provides users with a fast-dissolve capability, the first of a new generation of high-speed effects called Fast FX, a host of commonly used digital video effects that are rendered at high speed using Media 100.

For information: Data Translation Multimedia Group, 100 Locke Dr., Marlboro, MA 01752-1192, (508) 460-1600, FAX (508) 481-8627.

Upcoming Events

September 30-October 2: Salute to Britain's Channel 4, American Cinematheque at the Directors Guild Theater, Hollywood. For information: (213) 466-FILM.

Various weekends in October, November, and December: 2-Day Film School, Miami-Palm Beach (October 8-9); Atlanta (October 15-16); Boston (October 22-23); Los Angeles (October 29-30); Denver (November 5-6); Chicago (November 12-13); Toronto (November 26-27); Hawaii (December 10-11). Day one covers film production, day two film business. For information: Hollywood Film Institute, (800) 366-3456, FAX (213) 933-1464.

October 6-16: Mill Valley Film Festival, Mill Valley, California. For information: (415) 383-5256, FAX (415) 383-8606.

October 7-16: 11th Annual Chicago International Children's Film Festival. For information: (312) 281-9075.

October 8-15: 13th Pordenone Silent Film Festival, "Forgotten Laughter: Unknown American Comedians," Poredenone, Italy. For information: 0432-980458, FAX 0432-970542.

October 12-15: 136th SMPTE Technical Conference and World Media Expo, Los Angeles. For information: SMPTE (914) 761-1100.

October 25-28: 2nd Annual Documentary Congress, held by Academy of Motion Picture Arts and Sciences and the International Documentary Association, Los Angeles. For information: (310) 247-3000.

October 25-28: Communications India 94 and Broadcast Cable and Satellite India 94 Exhibition and Confer-

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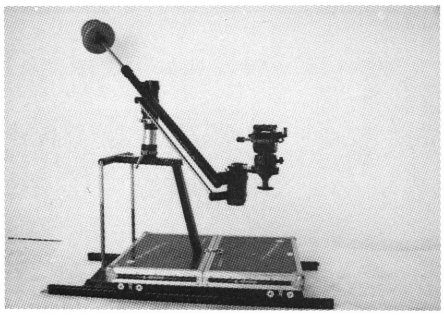

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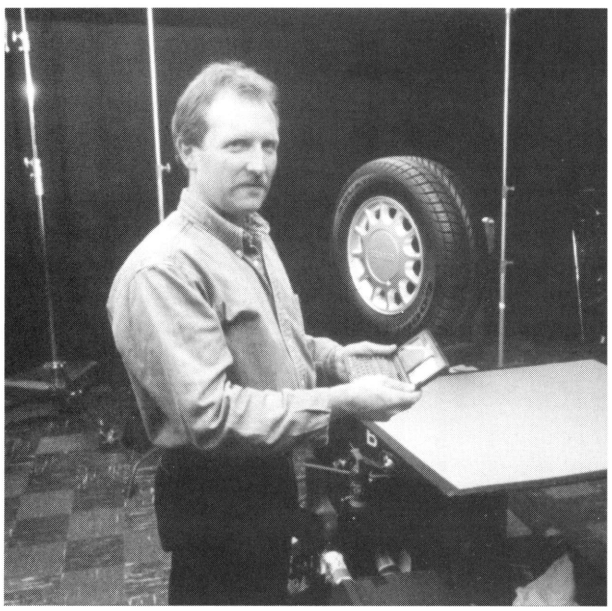

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ence, New Delhi, India. For information: Prem Behl, President, Exhibitions India, E-6 Defence Colony, New Delhi 110 024, India, 91.11.462.2710, FAX 91.11.463.3506.

October 26-30: Okomedia-Festival, for new films and television productions on ecological subjects, Freiberg, Germany. For information: 761-52024, FAX 761-555724.

October 27-30: The 7th Annual Virginia Festival of American Film, Charlottesville. For information: the Virginia Festival of American Film, University of Virginia, Box 3697, 104 Midmont Lane, Charlottesville, VA 22903.

November 1-6: 10th Annual Film Arts Festival, San Francisco and other Bay Area locations. For information: (415) 552-8760.

November 2-3: Rocky Mountain Film and Video Expo, Denver, Colorado. For information: Mark Cramer, ExpoMasters, Inc., (303) 771-2000.

November 4-6: 19th Annual Banff Festival of Mountain Films, Banff, Alberta, Canada. For information: (403) 762-6125, FAX (403) 762-6277.

November 8-13: 25th Sinking Creek Film/Video Festival, Nashville. For information: (615) 322-4234 or 322-2471

November 9-13: 6th Annual Sarasota French Film Festival, Sarasota, Florida. For information: (813) 351-9010.

November 18-20: LDI 94, Trade show for technology and design professionals, Reno, Nevada. For information: (212) 229-2965, FAX (212) 229-2084.

November 18-20: Lighting Design and Production Techniques workshop in television lighting at LDI 94, Reno, Nevada. For information: (212) 229-2965, FAX (212) 229-2084.

November 26-December 3: Camerimage International Film Festival of the Art of Photography, Bydgozoz, Poland. For information: Fundacja TUMULT, Rynek Nowomiejeski 28, 87-100 Torun, Poland, phone 48 56 248 79, FAX 48 56 275 95.

Beavis and Butt-head Mean Business

Animated anarchists prompt MTV to create specialized studio.

by Brooke Comer

Beavis and Butt-head have brought enough work to New York's production community to make Mayor Giuliani consider giving them a key to the city. According to Abby Terkuhle, MTV's Senior Vice President of On-Air Creative and Animation, Beavis and Butt-head launched the MTV animation studio, which now serves not only America's favorite adolescents, but *Anim-Oddities*, a new half-hour show that premiered this fall.

Anim-Oddities pairs The Head with another character called The Maxx, adapted from the Sam Keyes comic of the same name. "The two characters will share the half hour," Terkuhle explains. New York director John Moynihan will design segments that will serve as the "glue" binding the two characters together. "It's a weird circus-type environment," says Terkuhle, "in which a carnival barker pulls back the tent flaps to reveal each cartoon in each episode."

> "Because the animation community is nomadic, it goes where the work goes; if we keep a steady stream of work here, the talent will come."

The new studio is located on a high floor in New York's Gulf and Western Building, overlooking Central Park. "When we began to think of putting in an animation studio for our shows," says Terkuhle, "people said it couldn't be done, that there wasn't enough talent with serious experience to run a West Coast quality studio on the East Coast." But Terkuhle knows many East Coast animators, and his instincts told him he could do it.

John Andrews, MTV's Senior Producer of On-Air Animation, describes how a *Beavis and Butt-head* episode comes together: "Chris Brown, the story editor, works with creator Mike Judge to hone the writers' stories. Then we have a meeting at which Mike, Chris and the supervising director and other producers listen to a rough track." This gives the design people a chance to picture the cartoon before any drawing is begun, and also to think about the look of various characters and locations. "When the information is distilled, and passed on to the storyboard artist, a board is completed and checked by Mike, to make sure it's telling the story," Andrews relates. If anything's missing, this is the time to tweak it.

All through the process, the design department works on getting character, prop and background designs together; by the time the board is done, the director has the whole package, and can time the action. The characters' actions are defined on exposure sheets, and laid out frame by frame. Once the exposure sheets and board are ready, the whole design pack goes to layout and posing. "Full-size drawings of key scenes and poses are rendered, and they're the blueprint for the overseas studio that animates and finishes the cartoon," Andrews explains.

Seoul, Korea's Rough Draft, one of three Korean facilities that does the bulk of America's animation shows, is the final destination for *Beavis and Butt-head*. Andrews notes, however, that much of the work is completed in the States. "We create models for all the

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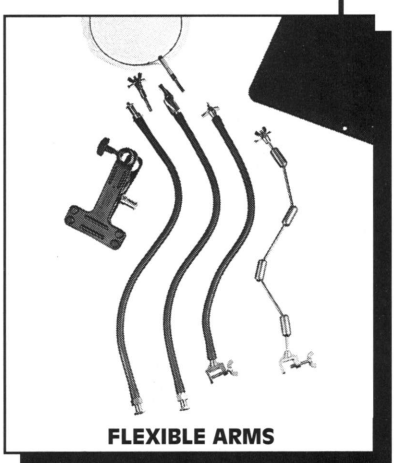

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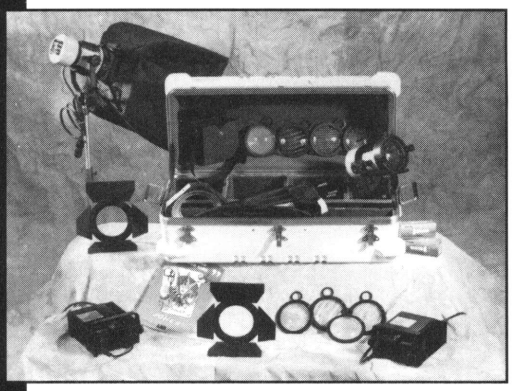

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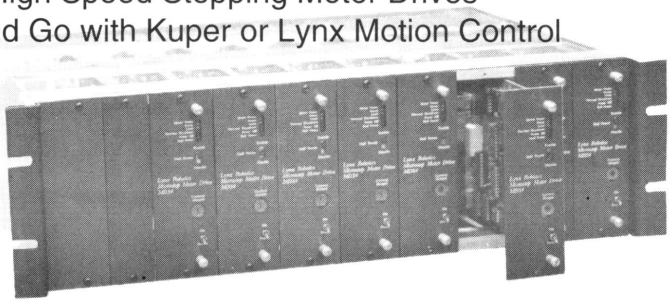

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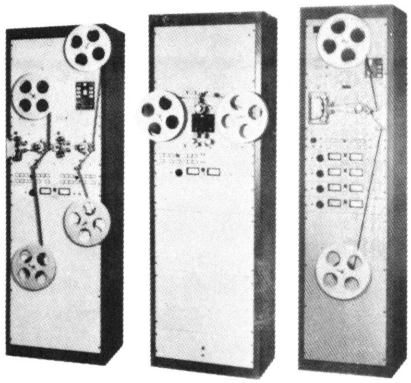

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characters and props and how they should be colored. We also create all of the background art and all the scenic backgrounds."

The studio is also planning to do 10 cartoons for next season's *Saturday Night Live*. The new 'toons will feature Milton, another Mike Judge character.

Another cartoon, *The Brothers Grunt,* debuted in August. *Brothers* is designed and laid out in Vancouver at ADA cartoons. "We're collaborating in a co-production," says Terkuhle. The Grunts, brothers from another world, are sent out to search for Perry, a missing sibling, who has escaped from a monastery. After arriving on Earth, the Grunts "fall in love with lamps and other objects we take for granted." The brothers, named for such crooners as Dean, Sammy, Bing and Tony, come from the "squash-and-stretch" school of animation. Danny Antonucci, creator of Lupo the Butcher, is creative supervisor.

Terkuhle hopes that *Angry Cabaret,* from John R. Dilworth, will become the next animated project to be spawned at the studio. "We're also talking to other areas of Viacom and MTV, like Viacom New Media, to develop CD-ROMs and video games. Hopefully we'll be involved in development and production." Other plans are underway for syndicated shows and theatrical home movies.

Since the '50s, Terkuhle points out, there have been no major animated productions in New York. "But since we've gotten our studio up and running, I've heard West Coast studios expressing interest in bringing more work here. Because the animation community is nomadic, it goes where the work goes; if we keep a steady stream of work here, the talent will come.

"What we're all about," Terkuhle concludes, "is doing creator-driven animation, to give creators the support they need to realize visions without a lot of interference. And that's rare these days."

Books in Review

by George Turner

North by Northwest
James Naremore, editor
Rutgers University Press,
230 pps., paper $15, cloth, $40

One of Alfred Hitchcock's best-liked pictures, *North by Northwest* is a virtual apotheosis of the chase melodramas that make up a large part of his work. The movie is given a close examination in this monograph, which maintains the high quality of its predecessors in the Rutgers "Films in Print" series. At the book's core is a shot-by-shot continuity script prepared from the film, similar to a cutting continuity but more readable and enhanced by frames from the film. There is an intelligent introduction by editor Naremore, an interview with Hitchcock by Jean Domarchi and Jean Douchet, an interview with screenwriter Ernest Lehman, three contemporary reviews, three commentaries, cast and credits, a Hitchcock filmography and a bibliography.

The Hitchcock interview by Domarchi and Douchet is especially revealing. By carefully avoiding questions the director had already answered in earlier interviews, such as those by Truffaut, the interviewers actually offer some fresh insight into the master's thinking. The Lehman interview by John Brady provides a look at the picture as seen by the writer, a POV generally ignored in most film studies. The reviews are a mixed bag; two of them tell us more about the critics' minds than about the movie.

As for the comments: Robin Wood, who has written perceptibly about Hitchcock for years, sees *North by Northwest* as something more than a light entertainment; Marian Keane seeks hidden meanings; while Slavoj Zizek finds that everything important in Hitchcock's collected works happens in threes, and that the pictures are loaded with pathological narcissism, oedipal journeys, anal father figures and other quirks that would have astonished the phobia-plagued director.

Overall, this book is an interesting addition to the ever-growing body of literature on the "Master of Suspense."

Gene Roddenberry:
The Last Conversation
by Yvonne Fern
University of California Press,
240 pps., cloth, $20

An entry in UC's "Portraits of American Genius" series, this is a collection of conversations with the creator of *Star Trek,* held during the last few months of his life. Roddenberry and his wife, Majel Barrett, invited the author to live in their home while writing these conversations because they felt no one could understand him or his creative wellsprings without becoming part of his world. Fern writes with a perception and understanding rarely found in celebrity interviews. *Star Trek,* she tells us, is "a household name, not only because the television programs and movies are entertaining enough to engage the capricious attention of the viewing public, but because *Star Trek* speaks to the fundamental longing of the human race to *be,* to survive, and to survive happily into the future."

Surprisingly, there is little here about the making of the show. Roddenberry was quite a man — six-foot-three, an L. A. policeman, a Pan Am pilot, a World War II hero, a writer and producer. There is a great deal of philosophical thought on a myriad of subjects which occasionally reveal Roddenberry's intellectual fearlessness. While he was on the Los Angeles police force, for example, he tried to convince Chief Parker that drugs should be legalized.

Roddenberry refers to Kirk and Spock as "sort of dream images of myself. Two sides of me." The characters illustrated for him that "very few of us are complete unto ourselves. It's quite a lovely thing, anyplace, where two halves make a whole." He frankly admitted his debt to other writers, such as Ray

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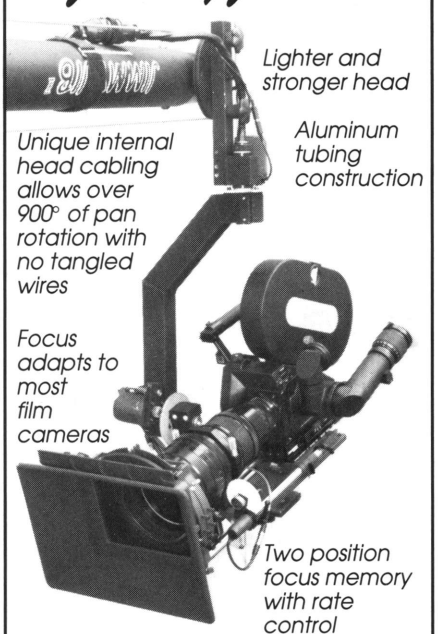

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Bradbury, Isaac Asimov, Arthur C. Clarke, and Robert Heinlein. And he believed that mankind "will reach maturity on the day it learns to value diversity — of life and ideas. To be different is not necessarily to be ugly; to have a different idea is not necessarily to be wrong. The worst thing that could happen is for all of us to look and think and act alike. For if we cannot learn to value the small variations among our own kind here on Earth, then God help us when we get out into space and meet the variations that are almost certainly out there."

Of such is the substance of the book, a well thought-out and nicely written piece of work.

Company of Heroes

by Harry Carey, Jr.
Scarecrow, 218 pps., cloth

So much has been written about John Ford that it's hard to imagine finding any new insights into his personality and working methods. Surprise! Harry Carey Jr., son of Ford's first stars, Harry and Olive Golden Carey, and a member of the "John Ford Stock Company," provides the closest look yet at the hard-boiled director. In the process, we also get honest looks at John Wayne, Ben Johnson, Victor McLaglen, Ward Bond, William Clothier, ASC, Pedro Armendariz, Winton Hoch, ASC, Paul Fix, George O'Brien and others who inhaled heroic amounts of Monument Valley dust for the betterment of Western movies. A lot of other fascinating characters are depicted as well: Charlie Russell, William S. Hart, Andrew McLaglen, Ken Curtis, Jim Arness, Richard Widmark, James Stewart, and others.

"Dobie" Carey writes frankly and unsparingly of "Uncle John," whom he describes as "the man I loved and, at times, tried very hard to hate." Many of those who worked with Ford didn't have to try very hard if at all, but in others he inspired a fierce loyalty. Carey reveals both the pros and the cons of working with Ford, a man who could be endearing and infuriating in about equal measure.

It's a fascinating story of camaraderie, boozing, fighting, women, laughter, pain, war, movies and other things that make life interesting. From this quarter, at least, Carey's first book is highly recommended.

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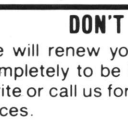

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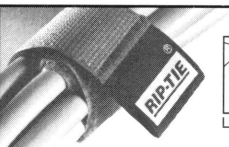

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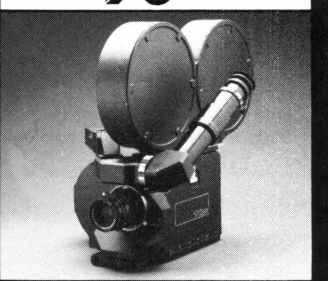

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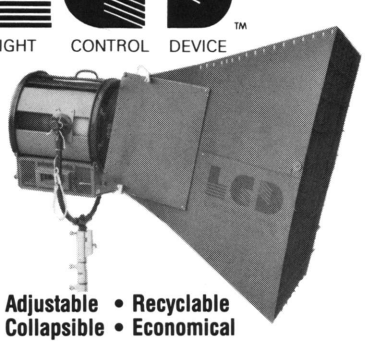

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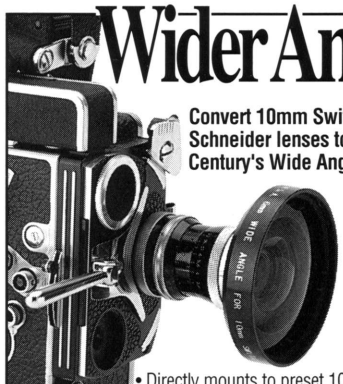

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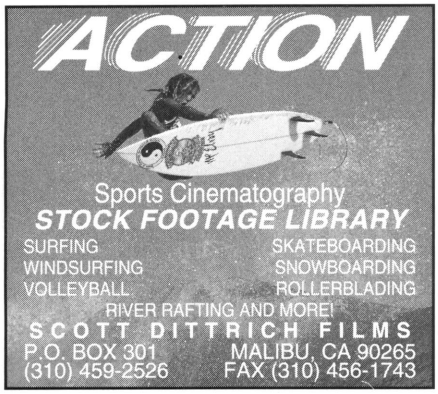

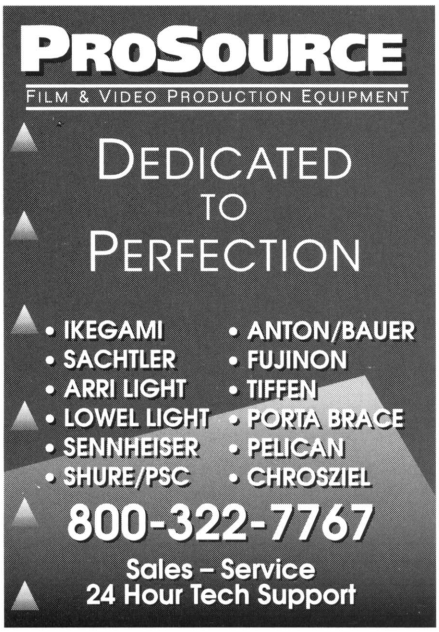

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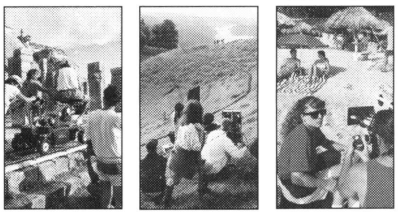

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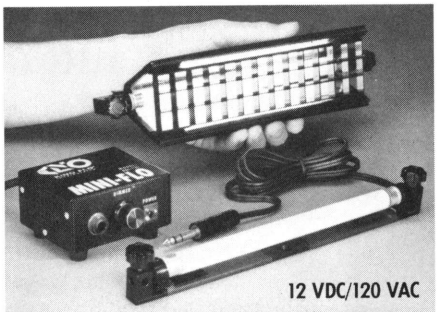

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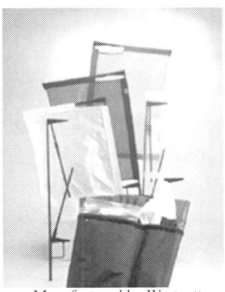

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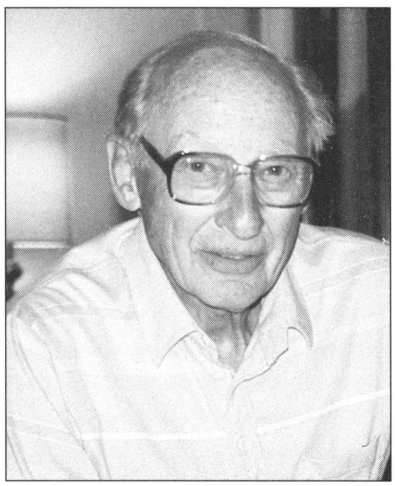

Donald C. Glouner, ASC, veteran special effects cinematographer and co-founder of a leading independent effects company, died on July 16. He was the younger brother of cinematographer Martin Glouner, ASC, whose career at Universal was cut short by blindness in 1933. Born Oct. 20, 1944, in Ronks, PA, Don Glouner was also the uncle and mentor of Richard Glouner, ASC.

A member of the ASC since 1950, Don Glouner became associated with special effects director Lawrence Butler at Columbia Pictures Corporation in Hollywood in May 1944. Butler had won an Oscar for his work on the Anglo-American *Thief of Bagdad,* and acclaim for other Alexander Korda productions. In the reorganized special effects department Glouner worked on many Columbia releases for almost 30 years. His work included process projection photography, matte shots, unusual camera effects, and second-unit direction. In 1951, pictorial stories were featured in *Life* and other national magazines detailing his photographic techniques for changing Louis Hayward from Jekyll to Hyde in Columbia's *Son of Dr. Jekyll.*

Much of Glouner's artistry at Columbia in the Forties was displayed in Technicolor pictures. Examples include matte shots of war-torn London in *Tonight and Every Night* with Rita Hayworth, and the fantasy worlds of *A Thousand and One Nights* (Academy Award nomination, 1945) and *Down to Earth.* He also contributed to the showbiz successes *The Jolson Story* and *Jolson Sings Again;* historical dramas such as *The Swordsman, The Loves of Carmen, Rogues of Sherwood Forest* and *Lorna Doone;* and the musical *The Petty Girl.* Other pictures which featured his matte and process effects include *To the Ends of the Earth,* for which he photographed process plates in several foreign countries, *The Wreck of the Hesperus, The Sign of the Ram, My Name is Julia Ross, Song of India, Father Was a Bachelor,* and *Gilda.* Another Glouner specialty was the creation of montage sequences, some of the more memorable being in *Jolson Sings Again* and *The Petty Girl.*

Eventually the team broke from Columbia, forming the Butler-Glouner Company, an independent effects studio. They continued to contribute to many Columbia pictures, including *The Guns of Navarone* and *Marooned,* but also provided effects sequences for other companies.

In April 1973 the partners sold Butler-Glouner and retired. "I have no records of the pictures we worked on and *The Dunwich Horror, Lost Horizon* [the 1972 version] and *Judge Roy Bean* are the only ones I recall," Glouner said several years ago. "Our work consisted of photographic special effects on feature pictures, television and commercials, plus second units, process photography and matte painting that carried no film credits."

Glouner was buried in Paradise, Pennsylvania. His first wife of 51 years, Muriel, died in 1985. He is survived by his wife Annette (called Ronnie), two sons and three grandchildren. At the request of his family, donations in lieu of flowers should be sent in his name to Livingston Memorial Visiting Nurses Association, 1996 Eastman Avenue #109, Ventura, California, 93003.

From the Clubhouse

Ron Garcia, George Spiro Dibie, Richard Stumpf, and Dan Curry are the ASC's newest members.

Active member Ron Garcia studied fine arts at Los Angeles Art Center College of Design and worked for eight years as an electro-mechanical designer in the California aerospace industry, working on the Apollo command module, the launch control system for the Polaris submarine, and the Saturn stage II rocket.

Between 1969 and 1977 he also worked as an editor, art director and producer/director of feature films. His feature credits as director of photography include *Disorganized Crime*, *Side Out*, *Storyville*, and *Fire Walk With Me*. Television credits include *Crime Story*, *Hunter*, the movie of the week *Murder in the Heartland*, for which he received both Emmy and ASC Award nominations, the pilot of *Twin Peaks*, for which he received an ASC Award nomination, the pilots of *Stingray* and David Lynch's *On the Air*, and HBO's *El Diablo*, for which he received an ACE Cable Award.

He joined the Directors Guild in 1992 and has directed four television series for cable and the networks.

Active member George Spiro Dibie was born in Jerusalem and at 18 enrolled in Los Angeles City College, where he earned a degree in theater arts while working as a director at the Pasadena Playhouse. In 1959 he entered the film industry as an electrician, and in his career before becoming a director of photography worked with such venerable ASC members as James Wong Howe, Jack Marta, Howard Schwartz, Harry Stradling, and Lenny South. During that period, Dibie also worked with Roger Dash on the production of more than 20 documentaries, educational and motivational films. Dash researched and wrote the scripts, and Dibie produced, directed, photographed and edited the films.

In 1974, producer/director Danny Arnold hired Dibie to work as a lighting consultant on *Barney Miller*. Since then, Dibie has earned five Emmys and nine Emmy nominations. His television credits include *Murphy Brown*, *Driving Miss Daisy*, *Room for Two*, *Trouble with Larry*, *Growing Pains*, *Nothing in Common*, *Sister Sam*, *Locals*, *The Ellen Burstyn Show*, *Andrea*, *Night Court*, *Head of the Class*, *A Girl's Best Friend*, and *Sister, Sister*. He has also photographed the ABC Late Night Mystery series, many television specials, movies of the week, and commercials.

Dibie has been president of the International Photographers Guild since 1984, and in that role has initiated apprenticeship programs to help bring young cinematographers into the field. He has also supported the development of training programs to help Guild members keep pace with rapid advances in technology.

Dibie is an active member of the Directors Guild of America, the Technology Council of the Motion Picture-Television Industries, the Society of Motion Picture and Television Engineers, Education Committee (ATAS) and UCLA Extension Cinematography Advisory Committee.

Associate member Richard Stumpf, senior vice president of engineering and development at MCA-Universal Studios, graduated from U.C. Berkeley with a bachelor's degree in electrical engineering. His engineering work experience includes ten years at NBC in Hollywood, two years in the U.S. Navy, eight years at RCA Broadcast, and 27 years at Universal City Studios. He is a fellow member of SMPTE and from 1984 to 1991 was chairman of the Working Group on High Definition Electronic Production. He is presently chairman of the Hybrid Technology Committee.

Stumpf received the Samuel L. Warner Memorial Award for work in motion picture sound. He is a member of the Academy of Motion Picture Arts and Sciences and served 21 years on the Scientific or Technical Awards Committee. He jointly holds two Academy Awards, for the development of Sensurround and the introduction of 24 frames-per-second color video methods. He was also awarded the Academy Commendation Medal in 1992.

Stumpf is also a founding member of the Technology Council of the Motion Picture-Television Industry, on which he served two terms as president and has been chairman of the Projects Committee since 1989.

Associate member Daniel Curry is currently serving as visual effects producer for Paramount Pictures' *Deep Space Nine* and *Star Trek: Voyager*. His responsibilities include the design and execution of the effects for both series; directing second unit; supervising motion control, other specialized photography and matte paintings; and overseeing digital compositing, animation and computer-generated images.

Curry worked for seven years on *Star Trek: The Next Generation*. Before that he was vice president and director of creative services at Cinema Research Corporation, and art director at Modern Film Effects. During those years he was involved with more than 100 feature films and more than 40 television productions. His professional film career began in 1979 at Universal with *Buck Rogers in the 25th Century* and *Battlestar Galactica*.

Before coming to Los Angeles, Curry taught fine arts and theater at college level. In 1968 he became a U.S. Peace Corps volunteer, building small dams and bridges in rural Thailand. He stayed on there to work on documentary films and architecture and production design projects for clients including the United States Information Service, the Thai Ministry of Education, the Bangkok Opera, and the King of Thailand. He also directed a weekly Thai language educational television series.

Curry holds a master of fine arts degree in film and theater and is a member of the Directors Guild, the Academy of Television Arts and Sciences, SMPTE, and IATSE Locals 790 and 816. He is also on the AFI's advisory committee for computers and new technologies.

Honorary Doctorate Presented to Freddie Young, BSC

by Professor Christopher Frauling

The following is the speech by which Freddie Young was introduced at the ceremony at the Royal College of Art.

My Lord Provost, by rights the man standing before you should be mounted on a camel in the Arabian desert, and filmed slowly riding towards you from about two miles away — surrounded by hazy heat waves, as if in a mirage — through an 800mm long-focus lens. For it was this sequence in *Lawrence of Arabia*—the most magnificent entrance in the history of the movies — which finally got him into the history books. Following a career which has spanned the entire story of cinema — from handcranked cameras to motor-driven ones, from silent to sound, from black & white to color, and from square-shaped images to letterbox -shaped ones and back again to wide-screen — Freddie Young, now in his 93rd year, is today recognized by film professionals as the finest cinematographer and lighting cameraman of them all. As William Wordsworth might well have put it had he ever gone to the pictures, "Bliss it was in that dawn to be alive, but to be Freddie Young is very heaven."

Dr. Freddie Young, BSC and his wife Joan at the Royal College of Art on July 8, 1994.

Born in 1902, six years after the Lumiere brothers first projected their flickering images before a public audience, the same year Picasso started the experiments which resulted in Cubism, and that Peter Rabbit first hopped into the scene, Freddie Young entered the industry in 1917, aged 15, as a film developer in the Gaumont laboratory when studios were literally glass houses for reflecting natural light.

In 1922, when Howard Carter discovered the tomb of Tutankhamun, Freddie Young was also in the Valley of the Kings, working for a film crew shooting a Conan Doyle mystery. And in 1929, his name began to appear in the credits. Sixty-eight years — and a staggering 124 films — later, he recalls that in a notoriously unstable business, he has been out of work only two weeks, and that was at the end of the First World War. In between times, he has photographed or modeled some of Hollywood's best-known faces and has lit everything from British farces, musicals and costume dramas such as *Victoria the Great* — Albert, I hope you're listening — via Hollywood epics to the greatest hits of David Lean (with Academy Awards for *Lawrence of Arabia*, *Doctor Zhivago*, and *Ryan's Daughter*). He has trained on the job to his own exacting standards most of the household names of British cinematography, including Freddie Francis, Jack Cardiff and Nicholas Roeg, and he has seen countless directors — the "limelight hogs," as he calls them — take the credit for his own perfectionist efforts.

A well-known improviser and craftsman, with an obsession for detail — he shot the tempest sequences in *Ryan's Daughter* through a revolving storm window borrowed from an ocean liner, and on one occasion had to do some fast talking when he was arrested at the Mexican border, by mistake, on a murder charge — it has been written of Freddie Young, "before him, the shambolic film industry simply ignored visual principles. After him, a sense of professionalism was mandatory, no questions asked. He, more than anyone else, gave our industry an international profile." He is, in short, the John Constable of cinematographers — Constable is, incidentally, his favorite painter. A few years ago, he crossed the line and started directing — proving the old adage that you are only as young as you feel. But the script we are shooting at this moment is that in which an Edwardian child grown into a world master of cinematic art — known to all as Freddie the Great — steps forward amid impassioned applause, to receive an honorary doctorate of the Royal College of Art. Take one. Camera. And . . . Action. Dr. Freddie Young.

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